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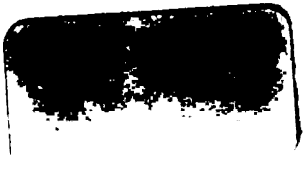

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MEDICAL TIMES.

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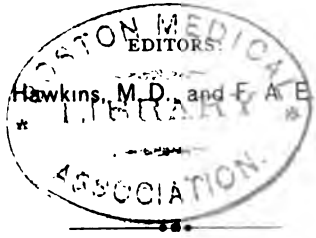

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MEDICAL TIMES,

A MONTHLY JOURNAL OF

MEDICAL, SURGICAL AND OBSTETRICAL SCIENCE.

JANUARY, 1892.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

By W. R. Whitehead, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER.

LECTURE I. GONORRHOEA.

Gentlemen:

I propose this morning, to talk to you about urethral inflammation, or, in other words, purulent and muco-purulent discharges from the male urethra.

From the earliest periods of history, we have evidence of the existence of this disease. Catheters said to have been found in the ruins of Herculaneum and of Pompeii, attest the antiquity of urinary troubles and presumably of urethral inflammation. That most remarkable and ancient people, the Jews, distinguished for their hygienic measures, notably that of circumcision, have left an unmistakable description in the fifteenth chapter of Leviticus, of this malady, where it is expressively designated as a "running issue," out of the flesh. Our ancestors, the sturdy old Saxons, called this inflammation the clap. Later it was erroneously called gonorrhœa and more modernly and now coincidently, with this term of gonorrhœa, that of urethritis is used, more particularly by medical men. It was until within a comparatively recent time, that gonorrhœa was believed to be followed, like syphilis, by constitutional effects, similar to those of this much dreaded disease. This was due to

the teachings of John Hunter, one of the greatest of experimental physiologists and surgeons, whose teachings on this subject, like an echo, reverberated down to the time of Ricord. His letters on syphilis, first published in the *Union Medicale*, prominently exposed John Hunter's source of error by showing the presence, occasionally, of the urethral chancre, existing at the same time with gonorrhœa and followed by the manifestations of secondary syphilis. This subject will be more fully described, at a future time, when we shall take up the study of chancroid and of syphilis.

To simplify my meaning concerning gonorrhœa, permit me, to enunciate the following proposition: namely, a purulent vaginal, or urethral discharge is eminently contagious. It has been repeatedly my experience to observe a most violent vaginitis to follow the application of a strong solution of Tincture of Iodine, succeeded by desquamation of large portions of the vaginal mucous membrane. Gentlemen, in one instance, when this kind of treatment was applied to the vagina, I knew the sexual act, subsequently, to be followed by a most violent urethritis, that it would have been quite impossible, without a knowledge of the circumstances, to distinguish from a virulent gonorrhœa contracted from impure intercourse. So you observe, that the application of caustics to, or the violent irritation of the vaginal, or urethral surfaces will produce an inflammation, and purulent secretion of a very contagious character.

I will formulate, for convenience of description, a second proposition: namely, a muco-purulent vaginal, or urethral discharge, in which the mucus element predominates more or less, may, or may not be contagious.

It has long been recognized, that the "*fleures blanches*," as they are called by the French, or "*whites*," as designated in our language, and also known as leucorrhœal discharges, are caused by chronic inflammation of the vaginal mucous membrane. Such inflammation offers different degrees of intensity, at different times, under the influence of causes which irritate this membrane and which change the character of the secretion from an innocuous secretion of liquid, composed principally of mucus, to one in which the pus corpuscles are greatly in excess, and which liquid, on account of these pus corpuscles, becomes a virulently contagious fluid. It is said, that the most virulent form of pus, such as that taken from the angry looking and secreting surface of a chancroid, if filtered of its pus corpuscles, becomes a harmless fluid incapable of contagion.

The contagious element, then, is the pus corpuscle, so that for medical men, there should, properly speaking, be no difference between a violent urethritis and gonorrhœa, especially, as regards the treatment.

It may, however, be necessary to make a clear distinction, in the use of these terms, in the presence of your patient. Suppose you tell him, before you know the cause of the urethral discharge, that he has clap or gonorrhœa, you may be the means of exciting suspicions in his mind, that may unjustly occasion a violent outbreak of domestic infelicity. A certain proportion of women, especially of those in the large cities, of lymphatic temperament, women overworked or run down in general health, suffer more or less from leucorrhœal discharges—discharges that present characters of chronicity, that are perpetuated by the foul air they breathe, and the confined, or overworked life they lead, and under the influence of cold, or of the periodical congestion of the utero-genital organs, such discharges assume a more purulent character, capable of possible contagion. Suppose such a woman should, after drinking freely of sweet wine or beer, and after vigorously dancing for half a night, have frequently repeated intercourse with a pale, lymphatic young man with small patches of inflammation left in his urethra—months or years after a previous gonorrhœa, tender spots about the fossa navicularis, or in the sinus pocularis, or in other parts of the urethra, or about the seat of a commencing stricture. Suppose such a young man of well pronounced amorous proclivities, after numerous potations of champagne, wine, or beer, should indulge repeatedly in the sexual act, with a woman affected with a profuse leucorrhœal discharge; it is extremely probable that a urethritis would be the result. The same might happen to some old gentleman of gouty diathesis, or to any middle aged gentleman whose reminders of amorous conquests are marked by an indurated epidydimis, or the morning drop, which agglutinates the lips of his urethra, and is suggestive of stricture.

A not infrequent cause of mild discharges from the urethra, is a subacute prostatitis, or the presence of phosphates in the urine. The irritating character of the urine, caused by the presence of oxalate of lime, or even of uric acid, produces much mental distress, occasionally, and if to this is added a little muco-purulent, or prostatic discharge, occuring as an occasional drop, the gravest apprehensions are often times excited in those so affected.

To again impress on you the importance of discretion in the use of the terms, gonorrhœa and urethritis, I would say, that the too free use of the word *gonorrhœa*, in its usual popular acceptation, may be injudicious. I would make, if you will permit me the expression, a moral and pathological distinction between these words; moral, for the use of the laity, and pathological, for use among ourselves; a pathological difference only marked by the abundance or paucity of the pus corpuscles in the urethral discharge.

In an ordinary case of gonorrhœa, occurring, we will suppose, in an individual for the first time, and after a suspicious connection, probably on the third or fourth, and not usually later than the eighth day, the patient will experience a certain heat or scalding in passing his urine; he will observe the lips of the meatus swollen and slightly everted, red or congested, and soon there appears at the meatus a drop of whitish and thin muco-purulent secretion. This increases in quantity and becomes more consistent, and of a yellowish or greenish color, and of a characteristically purulent nature. The inflammation has extended to the deeper parts of the urethra, the glands and penis becomes congested, painful erections occur at night, the penis arched downward, and the condition known as chordee supervenes—then aching pains in the groin and in the testicle, and sometimes the general reaction is so great that pain in the loins with considerable fever may occur, requiring the patient to go to bed.

When the patient complains of acute pains in the groin and the testicle, make him wear a suspensory bandage, and if in the country where such cannot be easily procured, improvise one with the heel of an old sock.

When the distress is great in passing water, tell the patient to immerse his penis in a cup of hot water—as hot as he can bear—a few minutes before and after urinating. Painful erections come on usually at night, and the patient will, even if not told, bathe his genitals with cold water, much to his relief. Should the erections be very painful and recurrent, I recommend the use, at bed time, of very small suppositories of cocoa butter, containing ¼ to ½ grain of morphia, or one to two grains of opium, introduced into the rectum by means of the small hard rubber suppository tube; give also, internally, if the patient is nervous, a quieting mixture composed of fluid extract of valerian, henbane and bromide of potassium. If there be some vesical distress, henbane and liquor potassæ, appropriately combined, is an excellent remedy, or the citrate of potassa may be substituted for the liquor potassæ.

There are certain dietetic rules to be rigidly followed; abstention from coffee and tea, all fermented liquors, and all alcoholic drinks generally.

Among vegetables, asparagus is very irritating to the mucous membrane of the bladder and urethra, and is to be avoided. Let your patient have plain and nutritious diet, such as meat, the ordinary vegetables, milk and demulcent drinks. An agreeable drink, much used in France, obtainable in some of our large cities, is *orgeat*. Cold flaxseed tea, sweetened and flavored with a few drops of oil of lemon, is an excellent drink. A little nitre or saltpetre may be added to this decoction.

To prevent the discharge from soiling the clothing, tell the patient to take a piece of old cotton cloth, about half a yard square, and stitch it each morning to the under side of the waist-band of his shirt.

I discard all urethral injections, except in the chronic stage of the disease, and then I rarely use them; and, as for the "*abortive*" treatment with nitrate of silver, I place no confidence in it at all. I predict that at a not very distant day, the urethral syringe, for the treatment of clap, will be a curiosity in the armamentarium of the instrument maker.

Let me give you the key to the proper treatment of gonorrhœa: in the first place, gentlemen, don't treat it too much; but above all, recollect that astringents are not suited to the earlier stages of inflammations of any of the mucous membranes, and especially to that of the urethra. Make the basis of your treatment depend on the use of alkaline substances, dissolved in demulcent drinks. Of alkaline remedies, the best are the acetate of potassa and the citrate of potassa; many prefer the latter, 2–4 drachms to a quart of liquid, used as a drink during the day. There are two remedies which have a special elective action on the urethral mucous membrane, these are the oil of yellow sandalwood and the balsam of copaiba. The oil of sandalwood may be given in capsule or in emulsion in ten drop doses or more. The stomach bears this remedy well and there are no particularly uncomfortable effects from its continued use, as with copaiba.

The balsam of copaiba may be associated with sweet spirits of nitre, mucilage of acacia, liquor potassæ and extract of licorice, which last recommended by Bumstead, makes the old "*Lafayette*" or Chapman mixtures more palatable. The long continued use of copaiba is sometimes attended with an erythematous eruption, not confined to any particular portion of the body, with a burning or itching of the skin, which might suggest the possibility of syphilitic roseola. Apart from the peculiar appearance of the eruption, I would remark to you, that syphilitic eruptions, as a rule do not itch. This copaibal eruption will disappear on the discontinuance of the copaiba. Gastralgia of a most distressing character, I have known to follow the long continued use of balsam of copaiba, and to continue a long time after its withdrawal.

With the above treatment, and the exercise of ordinary prudence on the part of the patient, most cases of gonorrrhœa are readily and rapidly cured without any unfortunate ulterior consequences. But not so in all cases, however; the injudicious use of caustic and astringent injections, or gross neglect on the patient's part, or an anæmic condition of the patient's blood, due to constitutional causes; as scrofula, phthisis, or imperfect recovery from exhausting febrile diseases, may retard the urethra in regaining its normal condition. Sometimes an obstinate gleet, when left to itself, under the influence of a change of air, of occupation and of agreeable surroundings, with a marked improvement of the general health, will get well almost unconsciously to the patient.

In those cases of imperfectly cured inflammation of the urethra, in which there is a persistent discharge, known as gleet, especially, when there is impairment of the general health and a certain atony, or debility of the parts, sea bathing, cold sitz baths, the use of the flesh brush and the internal administration of tonics; as the muriated tincture of iron, and the occasional use of mild astringent injections, may be all that is required to effect a cure. When there are patches of urethral inflammation, or where there is a commencing stricture, nothing does so well as the use of the steel sound as large as the urethra will admit. It is not an infrequent occurence in long continued cases of gleety discharges, in which there is, probably, soreness on pressure of the urethra at the fossa navicularis, to find that a division of the meatus with Civiales *bistourie cache*, which I show you—introduced for this purpose—will effect a cure of the gleet. I recall a very obstinate case of gleet that I cured in this way. The patches of inflammation, however, may be lower down in the urethra, and among a certain class of men thus affected, after a too free indulgence in wine and an exercise of the genital function, if such are fortunate enough to escape a retention of urine, they are pretty sure, within twenty-four hours, to find a notable increase in the gleety discharge, with a marked change in it character, (just such cases as these are sometimes mistaken for a new attack of gonorrhoea.) A warm bath will very much allay the congestion that has occasioned this change. In fact, gentlemen, the warm bath is a valuable agent in all inflammations about the urethra and bladder.

There is an instrument, rather complicated, called the endoscope, that of Desormeaux, modified by Cruise, is the best known. This instrument has not met with general favor, and I must admit, that with an ordinary urethral tube made for the purpose, such as I show you, and the head mirror, used in examining the throat, will answer all the purposes of the endoscope in exploring the canal of the urethra.

With the *bougie a boule*, or bulbous bougie, which I exhibit to you, the bulbs being made of many sizes, commencing strictures of the urethra may be accurately located. By the aid of the canula, or urethral tube, tincture of iodine and nitrate of silver can be applied to the inflamed patches. Before closing, I shall allude to some complications of gonorrhoea or urethritis, of which I have not yet made mention. Sometimes the lymphatic glands of the groin above Poupart's ligament becomes inflamed, usually on one side only, causing an angry, painful swelling, known as a *sympathetic bubo*. This frequently suppurates—suppuration is the rule.

Now, while on this subject, I will mention that the bubo of chancroid often suppurates also; but that the multiple, hard buboes of syphilis

never suppurate—possibly, I should not say never, because there is no general law without its exceptions.

Another complication of gonorrhoea is what is known as *gonorhœal rheumatism*, which I don't believe is a rheumatism at all. There is usually little, or no fever with it, and the usual remedies for rheumatism do not affect it. There is a complication affecting the eye, occuring during gonorrhoea, which is an aquo-capsulitis or inflammation of the membrane of Descemet, and often associated with the so-called gonorrhoeal rheumatism. No serious results follow this gonorrhoeal opthalmia, which, however, must not, by any means, be confounded with that formidable disease, *gonorrhœal conjunctivitis*, which involves the conjunctiva, and sometimes the eye ball and all its contents, seriously menacing the eye sight. This disease is caused by the direct contact of the purulent matter of a gonorrhoea to the eye, and excites a most violent inflammation—so that gonorrhoeal conjunctivitis is one of the most virulent maladies in the whole range of eye troubles; it calls for very prompt and energetic treatment. In this disease, the free use of nitrate of silver is urgently required. The most scrupulous attention is demanded in frequently cleansing the eye with water. In applying the nitrate of silver, its action should always be limited by the immediate use, afterwards, of a solution of common salt.

LECTURE II.

GENTLEMEN:—

PROSTATORRHOEA, PROSTATITIS and CYSTITIS, will be the subjects of my lecture to-day. They each bear certain relations to the subject of the last lecture on urethral inflammation or gonorrhœa. The extension of the inflammation of a clap to the prostate and to the neck of the bladder, is always a possible complication of this disease, and especially when it becomes chronic and assumes the characters of a gleet.

I wish you to bear in mind the peculiar anatomical and physiological relations, which the prostate gland occupies, towards the genital function so that you may be enabled, better to understand affections of this organ.

The prostate is a dense friable gland, through which the urethra passes, and is about the size and shape of a horse-chestnut, and is enclosed in a thin but strong fibrous capsule. The posterior layer of the deep perineal fascia also envelopes the prostate. Between this posterior layer and the fibrous capsule, is a very important plexus of veins called the prostatic plexus; the dorsal vein of the penis communicates with this.

In wounds of the prostate, as in the operation of lithotomy in the adult, this plexus acquires dangerous importance on account of possible purulent absorption and pyæmic accidents, and even in inflammation of the prostate this plexus may participate in the inflammatory action.

Recollect that the numerous follicles, of which the gland is composed, open by 15 or 20 little excretory ducts into the floor of the urethra, in its prostatic portion; and remember also, that the ejaculatory ducts traverse this gland.

During the sexual orgasm there is a more or less abundant secretion of prostatic fluid, which is of a thin, watery consistency and opaline color. This secretion often escapes from the meatus during the turgescence of the penis. The mixture of the prostatic fluid with the spermatic fluid, undoubtedly subserves an important part in the act of fecundation. However this may be, the prostate gland plays an important role in the functions of the male genital organs, so much so, that atrophy of this gland, from any cause, impairs the sexual powers of the individual.

Prostatorrhoea is an abundant and abnormal flow of the prostatic fluid, and coincides with more or less congestion of the prostate and is very apt to be accompanied by some degree of seminal weakness, so that emissions of small quantities of spermatic, mixed with prostatic fluid occur after urinating, or defecating; the male genital organs being in a more or less constant state of slight turgescence. I have observed in young men addicted to frequent masturbation, or whom I have had the best reasons for suspecting of this practice, and in whom there was great irritability of the genitals, that the prostate very largely shared this irritability; and, moreover, that the hypersecretion of prostatic fluid coincided with a degree of congestion of the organ that predisposes it, under the influence of but slight additional stimulus, as cold, to active inflammation of the prostatic follicles.

But prostatitis, especially if acute, is more commonly observed to take place during gonorrhoea, or in men with gleety discharges from the prostatic, or deep-seated portions of the urethra, and who after too frequent sexual indulgence and free use of stimulants, light up an old urethral inflammation that extends rapidly to the prostate.

In a person, the subject of acute prostatitis, probably during a gonorrhoea, the prostate gland becomes engorged and swollen, rendering the enveloping capsule tense; the whole gland becomes enlarged, hard, and pulsates to the finger introduced into the rectum; it is felt to protrude into the rectum, causing the sensation of a foreign body, and the patient has straining and a frequent desire to urinate; there is a feeling of distress and weight at the lower part of the rectum, and often vesical tenesmus.

The relation of the prostate to the anterior wall of the rectum is so intimate, that on introducing the finger into the rectum, the enlarged, tumefied prostate is felt to be extremely painful, hot and, as I have already said, pulsating to the touch; the act of defecation causes pain, and there is not only difficulty in urinating, but also, if the inflammation be severe, retention of urine. This you can readily understand when you reflect that the tumefied gland surrounds the urethra, necessarily producing an occlusion of the urethral canal. This condition may urgently call for the use of the catheter—a number 6 or 8 gum elastic catheter, well oiled and introduced with the utmost gentleness. Warm hip baths frequently repeated are of great service. Use suppositories, with the small hard rubber suppository tube; they should contain one-quarter to one-half grain of morphia, or one-quarter grain of extract of belladonna. The patient must remain in bed; absolute rest is required. If the pain and distress continue, and rigors should occur, carefully examine the prostate, there may be an abscess forming; this generally opens into the urethra, but sometimes into the rectum.

Operative interference in these cases is generally not available, and fortunately they are of rare occurrence. Warm laxative enemata, and large flaxseed meal poultices to the perineum, secured with a T bandage are useful.

The acute symptoms of prostatitis ordinarily subside after a few days; no abscess is formed, and resolution of the inflammation sets in under appropriate treatment. But the case is apt to fall into a state of sub-acute inflammation that persists for months or more. In the sub-acute state, blisters applied on each side of the raphe of the perineum, and frequently repeated, should be tried. Climate exercises a remarkable influence on this disease. It is my belief that it is most prevalent in moist, hot countries, and that dryness of climate is an essential element in it cure. In sub-acute prostatitis, if the patient should be a young man having tubercle in his lungs, it would be well to bear in mind that tubercle, in some rare cases, affects the prostate gland. If the disease should be tuberculous, no local treatment will be of much avail; however, the local disorder in the prostate, may improve with the improvement of the general health.

After this brief consideration of Prostatorrhœa and Prostatitis, I shall now invite your attention to a very common disease, which is *inflammation of the bladder* or *cystitis*. There is scarcely any disease which you will be more frequently called upon to treat; and it is because it is so common that I wish you to have a right understanding of its nature and proper treatment. You should look upon cystitis as a symptom, rather than as a disease; if you will seek out the cause of inflammation, you

will have made a step in the right direction towards a proper knowledge of this disease. Sir Henry Thompson very properly objects to the term *catarrh* of the bladder to designate an obstinate form of chronic cystitis, and I think he has displayed admirable good sense, as he does in all of his writings on diseases of the urinary organs, to animadvert upon the meaningless use of this term: Catarrh of the nose may be a syphilitic or a scrofulous ozæna, or a simple inflammatory affection due to cold, to polypus or other causes. So you will observe that for you to use this expression you should, as medical men, recollect the relation it bears to chronic inflammation of the vesical mucous membrane, so as not to fall under the odium of ignorantly using a popular term, as objectionable as it is vague.

The causes of cystitis are numerous; it may recognize a traumatic origin, as an operation performed on the bladder; or may be due to the presence of stone in this viscus; cystitis frequently occurs with stricture, and hypertrophy of the prostate, which are both obstructive to the outward floor of urine; the action of cantharides is another cause, disease of the kidney—altering the character of the urine—indeed any condition which occasions a retention of urine and favors the decomposition of this fluid by the conversion of the urea into that irritating, pungent compound, so common in stale urine, the carbonate of ammonia; and also paralysis affecting the contractility of the muscular fibres of the bladder. A common cause favoring decomposition of urine is the existence of saculi, or little pouches of the mucous membrane which form a kind of hernia of portions of this membrane between bands of fibres of the muscular coat. During an attack of gonorrhœa, it very often happens that an extension of the urethral inflammation to the neck of the bladder takes place, usually after the second or third week. There is frequent and painful micturition, and the vesical tenesmus is so great as to render the patient semi-delerious; small quantities of bloody urine are passed at short intervals, and defecation is attended with intense pain at the neck of the bladder. The symptoms are much more severe, however, in cystitis of traumatic origin, than in that which is due to gonorrhœa.

Warm hip baths, hot flaxseed meal poultices with a little mustard sprinkled on them and applied to the hypogastrium, give relief. Suppositories of morphia, or opium in sufficient quantities, and often enough repeated, are indispensible to allay pain. When the disease is very acute, demulcent drinks, as; gum arabic water, containing a small quantity of citrate of potassa, infusion of slippery elm bark, or cold flaxseed tea flavored with oil of lemon, or triticum repens with nitre, the basis of the mixture long used in the Paris Hospitals and known as the "*tisane de chiendent nitre.*" Usually under this treatment a case of acute cystitis will be readily controled.

The most intractable form of cystitis is that commonly described as catarrh of the bladder. In mild forms of chronic cystitis, there is some mucus or muco-pus in the urine; but in those obstinate cases described as catarrh, there is a ropy, muco-purulent and tenacious sediment in the urine, that is heavy and settles in a mass, forming a thick stratum at the bottom of the chamber.

Decomposed urine in the bladder is the principal cause of this disease. The bladder not being completely emptied at each act of micturition, there remains a small amount of urine to undergo decomposition. If the little saculi or pouches, which I have mentioned, exist, or if there be any obstruction to the ready outward flow of urine, as in hypertrophy of the prostate, decomposition of the urine in the bladder is much favored. It is exceedingly important then, to relieve the bladder of this stale ammoniacal urine, and to effect this, the bladder must be carefully washed out two or three times a day; for this purpose, a soft, flexible catheter should be carefully introduced, and a small quantity of tepid water very slowly and cautiously injected.

Nothing can be more hurtful than to distend an inflamed bladder with six or eight ounces of water, injected with force. Recollect how sensitive the mucous membrane of the bladder is in health, and how much more sensitive it must be when inflamed; and if you will remember that the bladder in health, does not fill up rapidly and suddenly, but, that the urine percolates, drop by drop, through the ureters; you will endeavor not to deviate too much from nature in your treatment of this organ. I would recommend you, then, not to throw more than one-half to one ounce of water, or other liquid into the bladder at a time. It may be quite tedious to wash out the bladder in this manner, but the relief the patient experiences justifies the pains taken.

The medicated injections in use are numerous; I shall speak only of those that I have found to be of value. The nitrate of silver has a good effect, if used very weak, and I would advise you to beware of a stronger solution than one grain to the ounce, and commence with a quarter of a grain. A weak solution of acetate of lead, one-quarter grain to the ounce, when the urine is alkaline and depositing phosphates, is recommended by Sir Henry Thompson.

If the urine is fetid, a drop or two of carbolic acid to four ounces of water, should be used as an injection. Borax or biborate of soda is a valuable agent combined with glycerine and water; a weak solution should be injection once or twice daily. Anodynes have been thrown into the bladder with a view to their sedative effect—the rectum is the proper place for these. The bladder does not possess the power to absorb, and nothing could more clearly prove this than the case mentioned

by Thompson, in which he injected four drachms of liquor opii sed. into the bladder of a patient with chronic cystitis, on four different occasions, without any sedative effect, whereas, a dose of twenty minims by the mouth was sedative. There is an old but excellent remedy, to which I desire particularly to call your attention, to be administered by the mouth; namely, liquor potassæ combined with tincture of henbane; the citrate of potassa is more agreeable and better born by the stomach, and may be substituted for the liquor potassæ.

In France there has long been used by Caudmont and others for chronic cystitis, tar water sweetened with a syrup made from the young buds of the pine, and known as the "sirop de bourgeons de sapin." This I was able to obtain from French druggists in New York, when in practice there. Balsam of copaiba and oil of yellow sandalwood are certainly very useful in this disease, but should be given in smaller doses than in gonorrhœa.

So serious and obstinate does this affection sometimes seem to be, that an operation known as *cystotomy* has been much practiced on the female for the cure of chronic cystitis. But, gentlemen, I suspect that the extraordinary facility and skill displayed in the performance of the operation for the closure of vesico-vaginal fistula, by some eminent gynecologists, is a greater reason why cystotomy is undertaken, than that there is any real necessity for this operation for the relief of obstinate chronic cystitis. I am not aware that there is sufficient evidence to show that scrupulously painstaking efforts have been made to wash out the bladder and to rely on medicated injections, before attempting cystotomy, which is certainly easier of accomplishment in the female bladder than in the male, particularly if complicated with hypertrophy of the prostate.

UTERINE COLIC, CAUSED BY ENTRANCE OF A LEECH INTO THE UTERUS.

By S. Cole, M. D., Denver, Colo.

In September, I had occasion to apply leeches to the cervix uteri of a patient, upon whom I had repeatedly resorted to this therapeutic measure. By way of preface, I will say that leeches do not seem to thrive in this climate; what it is that affects them I do not know, but the fact is patent to all who have made the attempt, that it is most difficult to preserve them, and that within a few days after having been

brought to Colorado, they exhibit evidences of debility, and display a reluctance to bite upon any part of the body, and especially, upon the neck of the womb. The leech is a very fastidious animal, possessing a love for blood and for sugar; most medicines and chemicals are highly destructive to it; salt and most of the animal secretions, especially those of the vagina, are repulsive. After having been induced to bite, it will be found that they do not fill themselves to the extent that leeches of the same size do in other climates; nor do they bite as deeply. In consequence, the local depletion and after bleeding are not as complete as is usual elsewhere. These remarks are somewhat foreign to the subject, nevertheless, to those who attempt to apply leeches to the cervix, they will appear quite pertinent.

It has been my custom after introducing into the vagina a Ferguson's speculum and bringing the os well into view, to thoroughly cleanse the exposed portion of the cervix with warm water and absorbent cotton; to apply a little sweetened water, thoroughly plug with cotton the canal of the cervix, and then throw into the speculum the desired number of leeches. In the present instance, I threw in two leeches, and after having unsuccessfully spent about a half hour in trying to induce them to bite, I crammed a wad of cotton into the speculum to maintain them in position against the cervix, hoping, that by so doing, they would bite. Hardly had I completed this manœuvre, when my patient complained of an intense colicky pain. I withdrew the cotton at once and found but one leech in the speculum. The plug of cotton had become covered with the secretions of the part and in its slimy, slippery condition had fallen from the canal, and my missing leech had evidently made its way up into the cavity of the womb, and by its presence caused contractions of the uterus, evidenced by the colicky pains which were now very intense.

I immediately removed the remaining leech and passed a uterine probe into the cavity of the uterus, stirring up his lordship to such an extent, that his quarters became uncomfortable; upon the withdrawal of the probe, he made his appearance slowly crawling from the os. Had the procedure been unsuccessful, I should have judged that he had fastened upon the interior of the womb and should have resorted to an intra-uterine injection of warm salt water. In consequence of the uterine colic still continuing, I relinquished the attempt to apply leeches and directed my efforts towards controlling the intense pain the accident had excited.

An idiosyncrasy in regard to morphine prevented a resort to its hypodermic use, so I was restricted to belladonna and hyoscyamus suppositories. Notwithstanding their employment in large doses, it was fully three hours before the pains subsided.

I report the case as being one of the most persistent cases of uterine colic that I have met with. It is remarkable, in the fact, that the colic should continue so long after the removal of the cause. Accidents of the kind mentioned are uncommon, but are liable to occur in the practice of any general practitioner or gynecologist. It is probable that others have encountered a similar mishap, yet, I have never seen a report of a case in a medical journal, therefore, I think it will be of interest to the readers of the *Times*.

SELECTIONS.

THE VALUE OF PATHOLOGICAL EXPERIMENTS.

BY RUDOLF VIRCHOW, M. D., *Professor in the University of Berlin.*

ADDRESS BEFORE THE INTERNATIONAL CONGRESS.

As reporter on Medical Education at the last International Medical Congress, held in Amsterdam, I raised the question, how far the experimental method is necessary to instruction; and the result at which I arrived was, that the use of this method to its greatest extent, and especially of vivisection, is an indispensable means. In a still higher measure, however, I had to raise into prominence the importance of this method in research; and, in opposition to those who, with constantly increasing vehemence, brought accusations against the experimental investigators on account of the direction and method of their researches, I was able to say, with the lively assent of the contradiction: "All those who attack vivisection as a means of science, have not the least idea of the importance of the science, and much less of the importance of this aid to knowledge."

In the two years which have since past away, the agitation of the opponents has grown both extensive, and important in its object. One country after another has been drawn into their net, and international combinations have been formed, in order by united force to obtain greater results. No increase of satisfaction has been produced by the concessions made in 1876 by the legislation in England. The demands have increased: a petition from the new Leipsic Society for the Protection of

Animals, dated March 8th of the present year, desired of the German Reichstag the enactment of a law by which "cruelty to animals under the pretext of scientific research" should be punished "with imprisonment for periods of not less than five weeks to two years, and with simultaneous deprivation of civil rights." All, indeed, do not go so far. Many do not demand that all experiments on living animals should be at once suppressed, but that there should be limitations, some demanding more, others less. But even these do not make it secret that this concession is only provisional; and they demand that even the official laboratories of the universities should be placed under the control of the members of the Society for the Protection of Animals, so that the members may be at liberty to enter the laboratories at any time.

It would be a mischievous delusion to believe that this movement is without prospect of success, and devoid of danger because of its manifest exaggeration. On the contrary unmistakable signs indicate that it has gained powerful allies, and that there is an increasingly impending danger in many countries, that even the State institutions, created expressly for the purpose of experiment, may have the scientific freedom of their methods attacked; So much the more does it seem to be incumbent on the representatives of medical science to defend their position, and to meet international attacks by international weapons. *The most powerful weapon, however, is truth;* and here, above all, *truth founded on competent knowledge.* If we cannot demonstrate our good right before all the world, and come to a mutual agreement on the ground of this right, our cause must henceforth be looked on as a lost one.

The attacks which are directed against us fall, when closely examined, into two categories, according to the principal point. On the one side, it is alleged that the experimental method—yea, modern medicine altogether—is materialistic, if not nihilistic, in its ultimate object; that it offends against sentiment, against morals. On the other side, it it is denied that the introduction of experiments on animals has had any actual use, that medicine has been really promoted thereby, and especially that the cure of diseases has in consequence made any recognizable progress. Even those who admit that there has been some progress, yet believe that just as much information could have been imparted by anatomy alone as by experiments on living animals.

Such objections are not new to one who knows the history of medicine. For hundreds of years, on similar or identical grounds, the dissection of human bodies was impeded, and anatomists were confined to the disection of dead animals; if, indeed—as was done by Paracelsus, the contemporary of Vesalius— the insulting question were not asked, whether anatomy was of any use at all. The feeling of the masses was

raised against the dissection of human bodies; and it is known that, at the commencement of the fourteenth century, the church for the first time gave permission for this to be done, but only under limitations which was still greater than those under which the larger number of our modern opponents would permit vivisection. It was no accident that the period of the reformation in the church first created for the great Vesalius a free field, so that he might test the truth of Galen's traditional dogmata by his own investigation of human bodies, and place true human anatomy in the stead of that anatomy of animals, which had during centuries formed the ground work of all medical ideas on the internal arrangement of man.

And now, first of all, pathological anatomy—what obstacles it has had to overcome even in the present time! Nothing is more instructive in this respect than the narrative which Wepfer, the celebrated discoverer of the hemorrhagic nature of ordinary apoplexy, gives of the acts of enmity with which he was persecuted when—it was towards the middle of the seventh century—the council of the town of Schaffhausen had allowed him to dissect the bodies of those dying in the hospitals. The only reply which he made to those who said to him that it is injurious and disgraceful to soil his hand with blood and sanies, was, that he could cleanse his hand with some water; but that much more disgraceful and injurious is ignorance of anatomical facts, which inflicts on inexperienced physicians and surgeons a disgrace that not the Rhine, not the ocean itself can wash away. Hence the study of anatomy is much rather to be praised, and to be supported by those who exercise the executive power in the State.

In fact, one government after another has recognized the decided importance of anatomical science, As far as the civilized world extends, so far at the present day are human bodies dissected. Even the laity comprehends that, without the most accurate knowledge of the structure of the human body and of the changes which disease and recovery produce in it, skilled action on the part of the physician is impossible. Any one who can only take a general survey of the history of science, must know that both the greatest epochs of the resuscitation and reformation of medicine commenced with the definite establishment of both the principle branches of human anatomy, and were even esentially brought about thereby. In the sixteenth century, it was physiological anatomy which brought about the definitive victory of empiricism over dogmatism, of science over tradition; in the eighteenth century, it was pathological anatomy which replaced mysticism, by realism, speculation by necropsy, obscure grooping and guessing by systematic thought. The opponents indeed spoke of materialism; but Harvey has rightly

said; "Sicut sanorum et boni habitas corporum dissectio plurimum ad philosophiam et rectam physiologiam facet, ita corporum morbosorum et cachecticorum inspectio potissimum ad pathologiam philosophicam."

Antiquity had only one time in which a powerful effort was made for the independent development of human anatomy. It was the time of the Alexandrian School, in the third century B. C., when Erasistratus and his companions, under the protection of the Ptolemies, undertook the first regular dissections of human bodies. The school existed only a short time, and yet it caused the first perceptible agitation of the humoral system of pathology. With the more accurate knowledge of the arrangement of the nerves, there grew up a new and more powerful generation of solidists; the empirics raised themselves against the dogmatists, and, though again soon enough subdued, they left behind them as a lasting inheritance the consideration that there is a certain limit to human piety, that the right of the individual to the preservation of the integrity of his body is interrupted by death, and that the veil which covers the mystery of life cannot be raised without the forcible destruction of the connection of the several parts of the body. It is this thought which, finally realized, has brought forth modern medicine. But eighteen centuries after the Alexandrian School, the impress of the humoral system of pathology still held independent sway in medicine. Of any positive progress in pathology during that long period nothing can be said. For Bacon has excellently said, in his *Novum Organum*, "Quæ in in Natura fundata sunt, crescunt et augentur: quæ autem in opinione variatur." The old humoral pathology was incapable of development, because it was not founded on nature but on dogmata. From however different origins they had sprung, Galenism combined everywhere with orthodoxy: among the Arabians with Islam, in the west with Christianity; and it required the powerful movement of the Reformation to burst the chains within which antiquated custom and hierarchical schooling had fettered the thoughts even of physicians. From Erasistratus to Vesalius, and at last to Morgagni, is such an immence stride, that it cannot remain concealed even from the weakest eye. Not only the outer form, but the whole nature of medicine has been thereby changed. If one follows Vesalius yea, even Morgagni, in speaking of the humoral pathology as among still existing things; if I myself am yet obliged to contend against Rokitansky, the last of the pronounced humoral pathologists, it must still not be forgotten, that that was no longer the humoral pathology of Gale nor Hippocrates. The four "cardinal juices" Paracelsus had already buried; modern medicine recognizes only the actual juices which flow in the vessels, and thence penetrate into the tissues This modern humoral pathology was essen-

tially blood-pathology (hematopathology). In name only does it agree with the humoral pathology of the ancients; in reality, it is quite another thing.

But even hematopathology is now happily overcome, and indeed, again, through a proper direction of anatomical study. Since the first but very uncertain researches in the territory of so-called general or philsophical anatomy which Bichat began in the commencement of the present century, down to the more and more rapid advances which the present time has made by means of the microscope, in the knowledge of the more minute processes of healthy and diseased life, attention has been constantly more and more turned from the coarser relations of whole regions and organs of the body to the tissues of which those organs are constituted, and to the elements which again are the efficient centers of activity within those tisssues. Immediately after Schwann had demonstrated the importance of cells in the development of the tissues, Johannes Muller and John Goodsir made the happiest application of the new view to pathological processes; and, looking back to a period in which we ourselves have lived, and which embraces little more than a generation of man, we may now say that never before was there a time when a similarly great zeal in research, and a comparable—though only approximately so—progress in science and knowledge has spread among physicians. The multiplication of the powers of labor, the constantly increasing emulation in researches, the unmistakable increase in the depth of the questions proposed—all these are phenomena of the most gratifying nature, and one would be very ungrateful if he would not acknowlege that these were in a considerable measure to be ascribed to the improvements in the means of instruction and to the multiplication of laboratories.

No one can be more disposed to concede the high value of anatomical studies to the development of medicine, than one who has made it a part of the task of his life to place anatomy and histology in that commanding position in the recognition of his contemporaries which they deserve. Nothing lies further from me than to discourage those who still expect the greatest benefit to the practice of medicine to arise from following out these studies. May indeed the growing youth, who will have to follow us in assuring the progress of medicine, learn from our example how useful it is to lay the true foundation of our science in anatomy. Assuredly, much of that which remains dark to us will then be rendered clear.

But we must not allow ourselves to be forced back on this way as the only permissible one. Were the attempt made to hinder totally or in great part researches on living animals to become successful, the same

procedure which has been now entered on against vivisection would also be commenced against mortisection. There would no longer be societies for the protection of animals, which we see opposed to us, but societies for the protection of human bodies. There would no longer be thunderings against the tormenting of animals, but against the desecration of corpses. Under the standard of humanity, which is just now unfurled even for animals, there would be preached in a still more impressive manner the campaign against the barbarity of medical men. People would appeal to the feeling of the masses—to the mother on behalf of the body of her child, the son on behalf of the dear remains of his parent. It would be proved that dismembering human bodies is injurious to morals and opposed to Christianity. It would be shown that the anatomy of man is useless for the treatment of disease; and perhaps there would be found ignorant or timid or egotistical medical men, who would come forth as witnesses against science. The mildest of our opponents would perhaps propose to us the compromise, that we should again make the dissection of animals the foundation of instruction. In short, we should be thrown back to the time before Mondini, before Erasistratus.

Such thoughts are by no means the productious of an alarmed fancy. The study of history teaches us sufficiently that victorious fanaticism knows no limits. It desires to heap to the full the measure of its victories; and, even when the traders are contented, the irritated masses press on to obtain the whole result. It is, indeed, not at all necessary, for us to go back to antiquity in order to bring before our eyes the condition of such minds. In no country of modern time are there wanting examples which are recognizable by the eye: for, along with the societies against "scientific tormentors of anamals," there exist everywhere, but mostly in a more unassuming form, brotherhoods and associations of all kinds, which labor most zealously against the scientific examination of dead bodies. It needs only an impassioned and exciting agitation, such as is now going on against the "torture chambers of science," to denounce to popular indignation the dissecting rooms as places where the youths under instruction are made barbarous. Whoever undertakes, with the same extravagant fancy as is now used in delineating the physiological laboratory, to describe the *post mortem* examination of a man, or an anatomical theatre, will not fail to have readers, who will turn away with horor and amazement at the misdeeds of anatomists.

In vain will an appeal be made to the fact that not one single school of medicine has existed, which has, without a fundamental knowledge of anatomy, established lasting advances in the science or the art of healing. The homeopaths and the so called nature-doctors (*Naturarzte*), who in-

[illegible] already on the scene to strengthen the ranks of the anti-vivisectors, will step forth and praise their results. Scepticism, which from time to time grasps about even in medical circles, and which only too easily finds there followers who have in vain called on medical aid for themselves or there belongings will scornfully point out how often the physician is powerless against disease. Therapeutics will be thrown aside as useless lumber; and it will be pointed out to us, as is now already done in the petitions of the societies for the protection of animals, that therapy is to be replaced by hygiene, the treatment of individual patients by general measures of public sanitation. And the attempt will then be made to excite the belief that prophylaxis can exist without anatomy or experiments on animals.

In so large an assembly of medical men as this is, a glance at those present teaches in how many special directions the medicine of to-day has gone. Not every one of these directions is in like measure and as constantly in want of all means of inquiry and scientific preparation, which are indispensable to cure disease as a whole. Hence, from time to time, a perceptible one-sidedness becomes manifest in certain of these special arrangements. One believes in his own sufficiency, and looks with indifference, sometimes with a kind of polite contempt on the rest of medicine. Even the truly scientific studies are not exempt from such one-sidedness; on the contrary, human pride, the tendency to over-estimation of one's self, prevail more readily in these than in partial diciplines. We ourselves have seen that organic chemistry, by a most partial use of a very moderate store of knowledge, has made the attempt —and, indeed, not without some temporary result—to prescribe its laws to medicine; and that numerous practical physicians, unmindful of the hlstory of our science, have in fact sought safety in a new kind of iatros chemistry. Yes, I have a very lively remembrance of the fact that, when I myself was entering on the scientific career, the hope of giving a purely physical aspect to biology was so powerful, that every attempt at morphological study was treated as something antiquated.

We have not allowed ourselves to be prevented by this from carrying on anatomical research with every exertion; and we are now in the happy position of seeing it everywhere acknowledged, that every advance in minute anatomy sees behind it an advance in physiological knowledge. Physiologists themselves are more and more becoming also histologists. No one, however, must say that phisiology is becoming totally dissolved in histology. No attempt must be made to replace one special subject by another. What is necessary to all branches of medical science in general, is the *knowledge of life*. But this can as little be attained by a simple external examination of the living, as by a partial investigation of

the dead. It can be reached by no single study or specialty; it is much rather the collective result of the cultivation of all individual branches of science.

What is to be attained by a mere external examination of the living body has been thoroughly taught by the older medicine. For centuries, sick and healthy have been observed with assiduous diligence, and in fact most valuable material has been collected in the most ingenious manner. but, on the whole, no advance has been made beyond "symptoms." What was perceived were the signs of something internal which was not perceived—indeed, the possible perception of which was hitherto doubted. Life itself stood as it were outside observation; it was only a subject of speculation. Intellectual formulæ were laid down, spiritualistic or materialistic, according to the general tendency of the mind of the individual or of the time; but all agreed in the conviction, that life itself is a transcendental and metaphysical problem. For the practical physician, knowledge that was founded in fact began with symptomatology; for disease as such was apparently not less transcendental than life itself, whose antitype it constituted.

How has it now come to pass, that symptomatology has entirely lost the high position in which it still stood little less than a generation ago, to such an extent that in most universities it is no more taught as a specialty? Have symptoms no more any importance for the physians? Can a diagnosis be made without a knowledge of symptoms? Certainly not. But, for the scientific physician, the symptoms are no more the expression of a hidden power, recognisable only in its outer workings: he searches for this power itself, and endeavors to find where it it seated, the hope of exploring even the nature of its seat. Hence, the first question of the pathologist and of the biologist in general is where? That is the anatomical question. No matter whether we endeavor to ascertain the place of disease or of life with the anatomical knife, or only with the eye or hand; whether we dissect or only observe, the method of investigation is always anatomical. For this reason. the thoroughly logical founder of pathological anatomy named his fundamental book *De Sedibus Morborum;* and hence this book became the starting point of a movement which, in a few decades has changed the entire aspect of science.

This change has been carried out to the greatest extent in ophthalmic surgery. Who could limit himself to perceiving that modern ophthalmology has scarcely a single point of similarity with that of the last century? Who contents himself with the symptoms of amaurosis? Who despairs of recognizing in it the existence of glaucoma? Every ophthalmic surgeon has in his hands the means of studying the thing itself, and not merely its signs. Even the antivivisectors acknowledge that

ophthalmology is a study that is capable of effecting something. But they forget that every organ of the body is not so favorably placed and arranged for the observation of its inner processes as the eye-ball. Since the wonderful discovery of the ophthalmoscope, anatomical analysis, even without the use of the knife, has become capable of penetrating so far into the individually remote, that we can immediately observe and study by themselves the smallest features of the fundus oculi, even, indeed, its single cells, or groups of cells, just as in an artificial preparation of an eye that has been excised. But it must not be forgotten that long anatomical and physiological studies have been a necessary preliminary to the interpretation of that which is now so easily perceived. The structure, arrangement, and function of each single part had first to be laboriously established, before it was possible, by a transitory glance at the altered tissue, to recognize what is especially changed; and no medical man will attain to a true comprehension of the essence of these changes, if he have not previously learned to recognize most accurately the anatomical and physiological nature, and the possible pathological changes, of the individual constituent part of the eye.

They speak lightly who objects to us, that not all the branches of medicine stand on the same height with ophthalmology. That will never be the case. Just as it is easier to explore the sea in its depths than the solid land, so will the most transparent organ of the body always be the most convenient place for medical diagnosis and treatment. While it is possible to observe without difficulty a cysticercus in the hinder part of the retina, one will always be taught to bring a cysticercus of muscle, or a trichina in a patient to light by vivisection. Never can it be required that every medical specialty should altogether equal ophthalmology in security of treatment and diagnosis; but any measure of success can only be sought in the use of the ophthalmological method in a corresponding manner in the other special departments. This method, however, is anatomical, or, as it has otherwise been expressed, localizing.

With this, we have reached the point which denotes the boundary between ancient and modern medicine. *The principal of modern medicine is localization.* To those who still constantly ask of what use modern science has been to practical medicine, we can simply point out that every branch of medical practice has accommodated itself to the principle of localization, not only in pathology, but also in therapeutics, and that thereby the greatest benefit has accrued to the sick. It is quite superfluous to seek out single examples, in order to show what profit the new knowledge has brought. Such examples are abundant. But we do not require them, for we can point to the general character of modern medicine. All those studies which already at an early period had a natural

tendency to localization, such as special surgery and dermatology, have in this way been raised to their present state of perfection. Those, however, which have retained from the old humoral pathology a tendency to the establishment of generalizing formulæ, gradually renounce the favorite tradition; and the fact is more and more comprehended, that generalization in truth is nothing else than *multiplication of foci*, and that the cure of a so-called general disease signifies just as much as the eradication of a single focus. That was in fact a reform in head and limbs; and he who has not grasped it ought not to say that he has consciously followed the progress of science.

The notion of the general validity of the doctrine of the localization of disease, and of the multiplication of foci of disease in the same individual, stands, as was often objected to me in the beginning of my career as a teacher, in strict opposition to the idea of the *unity of disease*, or, as it is expressed in customary language, to the *ens morbi*. My former colleagues still retained large portions of this idea; they believed that the practical physician entered into arbitrary, and therefore dangerous, speculations, when, in the presence of a single case of disease, he assumed the disease to be a plurality. To me it seems rather the reverse; that the physician enters on a fruitless project (*schematismus*), and one dangerous to his patients, if he suppose each individual case of disease to correspond to the opinion of his school or his own private view, and calculate his prognosis and treatment thereby. Meanwhile, these considerations, derived from medical practice, on the *utility* of a certain way of perceiving disease, can lead to no decision as to its *truth*, and yet at this result only is it possible to arrive. How shall we establish it?

All the world is at one on this point, that disease presupposes life. In a dead body, there is no disease. With death, life and disease disappear simultaneously. This consideration led the older physicians to assume disease to be a self-living or even animated essence, which took its place in the body along with the vital principle. Many went so far as to define disease as a combat between two contending principles, the innate life and an intrusive foreign body. But all came back to life as a preliminary condition of disease. The view was first lost in the old Leyden school; from Boerhaave emanated the dogma, which his pupil Gaubius placed at the head of his long used *Hand-book of General Pathology*, the first written on the subject: *Morbus est vita præter naturam.* Disease is life itself, or, to speak more correctly, it is a portion of life.

This assumption displaced the unfortunate dualism which had so long dominated medicine; or, at least, it ought to have displaced this dualism between life and disease. If, nevertheless, it has not completely done this, and if more than a century has been required to break up the

still constantly existing dissonance, the reason lies in the difficulty of finding a satisfactory conception of life. And here the question must not be passed by: Where has life its special seat? *Ubi sedes vitæ.* John Hunter went back to the ancient view, already expressed in the Mosaic formula: "The life of the body is in its blood." Flourens believed that he had found the seat of life, the *nœud vital*, in the central nervous system, in the medulla oblongata. The one, like the other, found himself obliged to institute experiments on living animals, for the investigation of this difficult question. Therewith the experimental method in the more strict sense began to pass into the practice of pathologists. Vivisection became a regular aid to research.

Certainly the consideration that the knowledge of life can only be obtained on the living being was long present. Beyond doubt, it was already formed in antiquity. But it is difficult to determine with accuracy the time when it first became practically active. Uncertain statements only on the subject are available. Zacharias Sylvius, a physician of Rotterdam, who wrote the preface to the Dutch edition of Harvey's *Exercitationes*, calls to mind the tale of Democritus, whom the Abderites regarded as insane, because they saw him constantly engaged in vivisection; when, however, the great Hippocrates was sent for to cure him, he fully recognized the value of his proceedings, and declared that all the Abderites were lunatics, and that Democritus alone was sane.* Probably this story has been narrated at the expense of the good Abderites; but it still shows that vivisection already "lay in the air." I will not attempt to decide whether it is true that the teachers in the Alexandrian school actually availed themselves of the permission of their king to dissect criminals. The only conclusion which I can derive from these tales is, that researches on animals must surely have at that time been already practiced. For whoever reflects on the vivisection of men, must acknowledge that, especially at a time when the anatomy of animals formed the foundation of medical study, vivisection had certainly been previously done on animals. In the school of the empirics, which proceeded from that of Alexandria, and in which necropsy was taught as the chief means of knowledge, experiment also appears as having a recognized claim; in the celebrated formula, which has been called the tripod of the empirics, and which served as the programme of their school, de-

* Harveji Exercit. anat. Roterod. 1671. Præfatio: Democritus solertissimus operum naturæ perscrutator, cum assidue secandis animalibus occuparetur, existimatus fuit insanus ab Abderitis; qui miserati sortem hominis advocarunt Hippocratum, ut illi medicinam faceret mentemque alienatam restitueret. Rogatus decurrit et offendit Democritum animalia secantem, quo spectaculo mirum in modum oblectatus, omnes Abderitas insanire pronuntiavit, solum sapere Democritum.

liberately planned experiment is expressly mentioned. Only it is not evident to what extent this research on living animals was carried on. Hence it is also unprofitable to inquire what advantage of any kind ancient medicine derived from vivisection.

In fact, the first great and distinctive example of successful vivisection which the history of medicine knows, is that of William Harvey. The foundation of the doctrine of the circulation, which in the main was experimental, has radically changed the whole direction of the thoughts of physicians. Had we this one example alone, it would be sufficient to prove brilliantly the utility, yea, the indispensability, of vivisection. Never has a dogma firmly established by the tradition of centuries and every kind of authority, which in truth formed the central point of a powerful and generally acknowledged system, been annihilated with such a headlong downfall. In complete recognition of the importance of such a man, Albert von Haller said that Harvey's name was the second in medicine, that of Hippocrates being the first. But it was a difficult step, to advance a new and unheard of doctrine which interfered with science in so revolutionary a manner. Having hesitated long whether he should publish his discovery; and when he at last carried his resolution into effect, the great vivisector cried: "Utcumque sit, jam jacta est alea, spes mea in amantium veritatis et doctorum animorum candore sita." (*loc. cit.* p. 81.)

It is certainly due, even in the present day, to the purity of a truth-loving and cultivated mind, to exonerate Harvey from the reproach of heartlessness, perhaps of brutality, of which our antivivisectors are so liberal. His new knowledge had cost the lives of many animals; he started as he himself says, "ex vivorum (experiendi causa) dissectione, arteriarium apertione disquisitionæque multimoda." And yet that was the least thing with which he was reproached; even kings at that time were so little tender-hearted, or, I may say, with an opponent were so brutalized, that King Charles I. found pleasure in seeing the experiments of his body-physician.

On the other hand, after Malpighi had, still in the same century, demonstrated the flow of blood in the capillaries of living animals, and after our century has added the knowledge of the existence of an actual capillary wall, the doctrine of the circulation appears so self-evident, it has so thoroughly entered into the ideas of all, that it already requires a peculiarly trained mind to comprehend the opinion of the older physicians on the local relations of the current of the blood. Whoever goes unprepared to the study of the medical classics, falls from one misunderstanding into another. The ideas of the nature of local processes are entirely changed, and yet the circulation, the capillary certainly more

than that of the larger vessels, stands in the foreground of pathological interest almost more than in truth it should. The widely comprehensive doctrine of inflammation and new growth, within which nearly the greater part of practical cases occur, was founded on experiments on the capillary circulation; not less so was the doctrine of the cure of local diseased processes of most varied kinds.

Even the worst opponents of vivisection recognize Harvey's services. But, say they, since then, nothing more of importance has been accomplished by vivisection. They do not know that it is precisely that department of the doctrine of the process of the circulation which embraces the vital properties of the organs of circulation, which is entirely unmentioned by Harvey.

On what does the activity of the heart depend? What influence do the vessels exert on the propulsion and distribution of the blood? What share falls to the arteries, what to the veins, what to the capillaries? All of these questions are of the highest practical importance, and none of them can be investigated otherwise than by experiments on animals. But Harvey could not attack these questions, because in his time minute anatomy was not yet developed. Who knew anything of the nerves of the heart, or of the vessels? Who had any notion as to the participation in the manifestations of the action of the heart and blood-vessels, on the part of the nerves, which supply the parietal structures, especially the fine muscles?

An interval of two centuries again intervened, before Edward Weber, by experiment on the vagus nerve in a living animal, first revealed the mystery of the innervation of the heart; and this, again, in a quite unexpected and unprecedented manner; and before our now so much abused friend Claude Bernard likewise showed on a living animal, the influence of the sympathetic nerve on the vessels of the head and neck.

Now for the first time, and through numerous other experiments which have tended to this end, we understand the circulation in its special characters. The pulse, that so highly treasured object of the old symptomatology, allows itself to be interpreted. It is to us no longer the sign of this or that disease, but the sign of the existence or non-existence of certain activities, of strength or weakness, of irritation or relaxation of certain tissues. Now for the first time we can understand in its individual peculiarities the action of the heart itself and the operation on it of certain substances—*e. g.*, cardiac poisons; and it is not almost alone the department of the diseases of the valves, to which alone, and with a scorn that cannot be rightly understood, the antivivisectors point on account of their incurability, but also the department of febrile diseases, which we are in a position to survey as well with regard to their symptoms as to their nature and their results.

The length of the interval of time between Harvey and the more recent experimenters on the innervation of the vascular apparatus is explained by the circumstance, that in that intermediate time two entirely new studies had to be created, to both of which the discovery of the circulation was an impulse and a preliminary condition. I mean physiology and general pathology; thus, indeed, both these studies which are to be regarded as the chief support of the experimental method, and which it was originally the custom to comprise under the name of "Institutiones Medicæ." Hermann Boerhaave had, in his professorship, combined them, and, indeed, had even united them with practical medicine; under his pupils, the division of labor commenced, and the formal seperation of the studies. Haller was the special creator of physiology. His experiments went first in the direction of exploring the vital properties of individual parts of the body, of single tissues, as would now be said. Among these properties, following the distinguished Glisson, a man, it seems to me, not even now sufficiently honored in his country, he assigned a prominent place to irritability. It would lead me too far if I in this place desired to attempt to show forth individually these memorable researches, the comprehension of which was rendered extremely difficult by the then not yet sufficiently complete explanation of the motions "irritability" and "contractility." For our purpose it is sufficient to point out that here for the first time nerve and muscle, the two most highly developed and thereby most energetic portions of the animal body, were made the subjects of experiment with regard to their special forms of activity. Contraction and sensibility appear as the special signs of living activity. Therewith the question of the basis of living activity was so nearly approached that Gaubius, who at the same time laid the foundation of general pathology, indicated the vital force as the source of contraction without going further.*

From these beginnings was developed at first in a very obscure and equally unprofitable manner, especially clouded by speculative vitalism, the doctrine of life in its modern forms. It has required much longer labors, mostly experimental, to arrive at a great and practical result in spite of all deviations. From the conception of irritability, originally created by Glisson, that of contractility has gradually become separate; and the contrast in which Haller placed irritability and sensibility with regard to each other has been dissolved, by the fact that contractility and sensibility are regarded as two special forms of expression of life connected with various elements, and are subordinated to irritability as

* Gaubius, INSTITUT. PATH. MED., p. 71. "Vis vitalis solidi est, qua illud ad contactum irritamenti se contrahit."

the general expression. In this sense irritability and vitality are nearly identical. Both are properties of tissue, and as such, directly or indirectly accessible to treatment and experiment.

In fact, experimentation is now rather directed to the tissue itself. Galvani's discovery of electric contractions, the labors of Alexander von Humboldt on irritated muscle and nerve-fibre, and many other contemporaneous researches, afford evidence of the changed direction in which the new biology labored. More and more sank down the mysticism of the spirits of life and of disease, the speculation as to an individual vital force; and from generation to generation medicine assumed more and more the character of a real natural science. The obscurity which had dominated especially the nervous system disappeared under the common labors of anatomists and experimenters; and especially since Charles Bell taught the difference of the nerves hitherto considered as similar in nature,* and thereby opened the road to research on the special importance and power of the single divisions of the central nervous system, one work after another has appeared, which has diffused new light on this difficult and complicated subject. It is impossible to go through all these works on this occasion, and it would be superfluous in an assembly of such accomplished men, many of whom have themselves labored in this glorious work.

I will now only briefly point out that among these labors a constantly clearer and more triumphant idea has advanced, which, in its beginnings, reaches far back into past time—namely, the idea of the proper life (*vita propria*) of the tissues. Every new form of experiment which is devised renders new parts accessible to scientific examination, and with each step in advance we become more clearly convinced that life, regarded as a great unit in the established sense, is a pure fiction, arising from the observation that in the hierarchical organization of the human body certain organs attain so elaborate a structure, and therewith so great importance, that they with complete right merit the name of vital organs. And as among these organs the *medulla oblongata* possesses the greatest importance, it is easily comprehensible that the idea should arise that it might really be the seat of life. But we know now that life is a collective functional action of all parts of the higher or vital, as well as of the lower and less important; and that there is no one seat of life, but that every true elementary part, especially every cell, is a seat of life. In biographical research also, as well as in pathological, we have arrived at a multiplication of foci. Of course the number of vital foci is much greater than that of foci of disease can ever be; and hence disease and

* We protest, it was Majendie who made this discovery.—EDS.

life, or, to speak more accurately, diseased and healthy life can very well co-exist in the same organism; always, however, so that disease signifies a reduction, a *minus* of healthy life. By this research we have even rediscovered the long lost essence of disease, not, indeed, in a spiritualistic form, but as a quite material *ens*, a genuine incarnate thing—*the altered cell.*

Has all now produced advantage? Was it worth the trouble to inflict pain on so many animals? to kill so many animals? Is there a really justifiable claim for allowing the experimental method to proceed still further? We can answer all these questions confidently in the affirmative. Not every experiment on animals has results as great as that of Galvani, results which have not merely led to a new and effective method of treating disease, electrotherapy, which have not only disclosed a large, new territory of vital processes, but have supplied the first preliminary condition for an incalculable number of the most important technical arrangements, the knowledge of the natural course of events. But galvanism might yet appear to limited and timid heads as an instructive and refreshing play, for the reason that not every result of true observation of nature is usually brought forward at once, and that nevertheless it may be of the highest practical value. The cellular theory and the proof of the *vita propria seu cellularis* are in themselves very abstruse things, and no one can cure patients by their means without understanding something further. And yet they have become the foundation, yea, in a certain measure the security, for localizing therapeutics, and they will surely become more so from day to day, when first materia medica in its wider extent shall have gone on the way which toxicology has already for a long time followed in a manner so rich in results.

How, then, can a great result to the science of healing be expected, if research in animals be cut off? For a long lime, no remedy has been more rapidly recognized, or more extensively used, than chloral, the effects of which were discovered and established experimentally by Herr O. Liebreich in my laboratory. How would it have been possible to know how to ascertain those effects, without experiments on animals? The animals' friends say to us, "Then try the new medicine on yourselves!" They refer us to the provings of medicines by the homeopaths. But, quite independently of the fact that the provings of the homeopaths have not taught us to recognize one single new remedy which can be compared even at a distance with chloral, and that these provings, even in regard to already known remedies, do not in the least correspond to scientific investigations; that thus they cannot be altogether regarded as an original example—one will yet not be able to earnestly desire that very different, possibly poisonous bodies, should be made the subject of self-experimentation by physicians or other men. This kind of morality,

which forbids experiment on animals, and counsels experiment on one's own life or on sick men, misses, in fact, the first foundations of intelligent examination.

The proof of the great importance of hygiene and prophylaxis is rather superfluous. If any class of men has been active in this direction, it is surely medical men. Never has there been a want of zealous hygienists among them; and when a great problem of prophylaxis was to be solved, one might be sure of finding medical men engaged in the work. We are so accustomed to this obligation, that we always regard hygiene and prophylaxis as belonging to medicine, and to no other science. But it is empty talk when it is said that prophylaxis will render therapeutics—yea, even in a certain degree, medicine—superfluous. The arrangement of this imperfect world is such, that there surely will be sick as long as men exist; and we are not afraid because of the threat that there will be no further need of us. Not even through the assistance of hygiene will people be able to do without us; and still less without experiment on animals. Will even the hygienists be condemned to test the various "causes" cold and warmth, dryness and moisture, dust and noxious gases, micrococci and bacteria, on their own persons, in order that they may from such self-observations determine their effects, and formulate laws? Intelligent governments will comprehend that it would be an act of madness to sacrifice human life, merely because it occurs to a small number of persons that it is criminal to sacrifice the lives of animals. Medical men are already more exposed in epidemics of all kinds, in the performance of their duties in hospitals, in the country, in their nocturnal visits to the sick, in operations and necropsies, than any other class of the community as a rule; and it requires all the blindness of the animal fanatics to require also of them that they should test on their own bodies the remedial, or poisonous, or indifferent action of unknown substances, or that they should determine the limit of permissible doses by observations made on themselves.

In the name of humanity, of morality, of religion, the suppression of experiment on animals is demanded. For, in fact it is not merely vivisection that is in question, but experiment on animals; that is, the experimental method in general. When the term vivisection is used, it is made to include in like manner all painful actions in which there is no cutting; indeed, to prevent any misconception, not only physiological, but also pathological and pharmacological experiments, are expressly included. *The criterion is pain. Everything by which, in the way of experiment, pain is inflicted on an animal is torture of animals*, and so far immoral and contrary to religion. With this definition of torture of animals, it might be possible to arrive at exceptional results by applying

it to other callings or men. The dog-fanciers, who in the rearing of their dogs often use, or caused to be used, methods full of torture and painful chastisement, would readily come into great danger. The improvement of horses for certain purposes would have to be entirely put down. A great part of our domestic animals would have to remain untrained, so that pain might be spared them. We should perhaps arrive at conditions similar to those produced by the wild dogs in Turkey.

Individual antivivisectors are at least so far consistent, that they would see the slaughter of animals also forbidden. From the vegetarian standpoint, the opposition gains a kind of systematic aspect. Thus Herr von Seefeld* demands a vegetable diet and the prohibition of vivisectors; but as he, as a vegeterian, has no need of flesh, he is strongly inclined to make still further concessions. Thus he rejects hunting for the purpose of pleasure, but cannot altogether dispense with it as a means of defending life. Others go still further, and sacrifice also war. The principle can scarcely be denied, that death is worse than torture. There could scarcely be a criminal code, which punishes the premeditated killing of a man less severely than the torture of a man. Not without reason is it alleged that a man who still remains alive after his misdeeds, may recover and attain to a complete or entire enjoyment of life. Grounds of mitigation in cases of murder and manslaughter are allowed also to men; but, as a foundation, the extremest injury which can be inflicted on man is always and everywhere the most severely punished.

As regards animals, the antivivisectors, on the contrary, consider torture to be worse than death. Although they reject every torturing or painful method of death, even for cattle, they without the slightest consideration cause animals, even highly organized ones, to be slaughtered or killed, not only for eating, but also for other purely subjective reasons. They go, indeed, so far as to demand that an animal which has survived vivisection shall be killed, although it might possibly still enjoy a long and happy life. Is there any logic in this, or any morality? How, may we have the right to kill an animal or any ground of public utility, to eat its flesh, to sell its skin, to pound its bones to manure for the field, and are we not to have the right of subjecting it to scientific research, which we institute on entirely ideal grounds, or on the grounds of the public weal, in which we even perhaps run the risk of becoming diseased? It will be difficult to assume that we institute researches on glanders or splenic fever for pleasure, or to pass away time, or without

* Alfred von Seefeld. ALTES UND NEUES UBER DIE VEGETERIANISCHE LEBENSWEISSE. Hanover, 1880.

knowledge of the great danger of inoculation. Whoever allows himself the right to kill animals, has no right to forbid physicians to vivisect animals for experimental purposes, or to undertake painful operations of any other kind.

Of course, we cannot desire that the misuse of this right should escape punishment. For it is with such an abuse, not with the production of pain, that torture of animals first comes into operation. Were every production of pain in itself an act of torture, punishment ought to be inflicted on a veterinary surgeon when he operates on a sick horse for the purpose of curing it. Culpable torture of animals lies before us, when pain is inflicted on an animal in an useless manner, and without purpose. Hence nothing can be said against the view that every experimenter should be subject to official inspection, but surely this does not require a society for the protection of animals. He who has a greater interest in domestic animals than in science, that is, in the knowledge of truth, is not qualified to be an official controller of scientific affairs. To what would it lead, if an experimenter, who had commenced his experiment in good faith, had perhaps to answer to some layman during the experiment, or to a magistrate afterwards, the charge that he had not selected some other method, or some other instrument, or perhaps some other experiment?

No: here is no question of objective right. So long as perfect liberty is left to every possessor of animals to kill his animals, be they wild or tame, at any time, and according to his own judgment, so long must it also be permited that, for scientific ends, and thus on purely internal grounds, experiments should be made on living animals. But the necessity of such experiments can naturally only be decided by the inquirer himself; as to the choice of place, time, the admission of strangers, he may be required to communicate with the inspector; but the carrying out of the experiment must remain in his own hands. So we understand the expression of the freedom of science.

What is objected to us is, that it is the outraged feelings of the possessor of horses, pet dogs and parlor cats, that excite him to the belief that the same thing may happen to his beloved animals as to the animals in the learned institute. We can sympathize with him. We would force no one to deliver to us his favorites, nor would we steal them. Were either of the two to occur, probably in every country the intervention of the magistrate would be called on with effect. But we also require that the disposal of the life and maintenance of those animals which have come into our profession in a legitimate way, should not be lessened to us, and that we should not be considered or declared to be *a priori* rough, void of moral feeling, and barbarians standing almost

on the threshold of crime. The evidence that moral earnestness is failing in modern medical circles, is nowhere afforded. The reproach that Christianity is imperiled by vivisection, is worthy of Abdera. The assertion that the medical youth are inevitably "brutalized" by dissection and vivisection, is, as usual, snatched from the air; as it is also a calumny that the vivisecting teachers have suffered injury to their morality.

At least, however, there is no ground to fear for science itself. To it is applicable what Bacon said of the sun: "Palatia et cloacas ingreditur, neque tamen polluitur."—*St. Louis Courier of Medicine*, October, 1881.

A CASE OF TRANSIENT MANIA, FOLLOWING THE LODGMENT OF A BED BUG IN THE EAR.

REPORTED BY A. B. KIBBE, M. D.

On the 5th of August, I was consulted by Mrs. ———, aged 63, who stated that early that morning she was awakened by something crawling into her ear, which she thought was a bed bug; she was greatly agitated and complained of constant pain, which increased whenever the object moved. On examining the meatus and membrana tympani, I detected a minute black speck directly in the centre of the latter, which seemed to move slightly at intervals. Inclining her head to one side, I filled the ear with glycerine; almost immediately she screamed violently, saying it was crawling into her head. She soon became calm, however, and said she did not feel it. On again inspecting the membrana tympani, the object had disappeared and the patient expressed herself as feeling greatly relieved and free from pain.

I saw her at 10 A. M.; at 2 P. M., a friend who had been with her came rushing into my office, saying that Mrs. —— was "crazy," had torn almost all her clothes off and would allow no one to come near her. I went immediately to the house and found the woman crouching in a corner, almost nude, screaming and beating the floor with her hands every few minutes. In about an hour, she had become quiet enough to converse, and said that she had pushed the pellet of cotton, which I put in the meatus before she left the office in the morning, into her head, and begged me to remove it. I examined the meatus and found the view of the drum-head unobstructed. A friend standing near, slipped

a small wad of cotton into my hand just as I withdrew the speculum. I showed her the wad, at which she was wonderfully quieted, remarking that she felt better and looked at the cotton as though it was the cause of all her suffering.

Still complaining of pain in her head, I ordered an ice-bag to be applied. On calling that evening, I found her sleeping quietly, having eaten a moderate supper. This case is peculiar in that, she should have been so affected *after* the bug was removed and destroyed.

A REVIEW AND REMARKS ON SKIN AND VENEREAL DISEASES.

By M. A. Wilson, M. D.

In the *College and Clinical Record* for December 15th, 1881, Philadelphia, there is reported a case of general eczema with malarial and syphilitic history. The patient had had an attack of intermittent fever eleven years previously, another just two months before; his general health was bad, appetite fair, tongue slightly coated, flatulence, without nausea, bowels usually constipated, passes small quantities of urine very frequently. The eruption was generally on the body, the discoloration (capillary congestion) well marked; the vesicles were still noticeable, with the usual irritating secretion, much itching and heat of skin, the skin marked by crevices and fissures at various points. He had been subject to such attacks for eleven years, the immediate one a sequence of the ague two months previous and which had lasted about three weeks. The man was emaciated, delicate and weak. The Professor (—— Gross) remarked that eczema is often found in people who are indolent, fat and lazy, take but little exercise and indulge freely in the pleasures of the table; also in many cases where the blood is impoverished from want of digestive power, proper food or other causes; further, certain diseased conditions of the blood must be ranked as causes.

This patient was put upon plain, nutritious diet, meat but twice daily; a warm, alkaline bath twice daily; tonics, quinine, iron and arsenic ordered. He had received some little anti-syphilitic medication, but this was discontinued. For local use, R. Ungt. Zinci Ox., Ungt. Plumbi subacet. aa. ½ oz., Chloral Camphor (aa. grs., xv), grs., xxx. Mix. No history or symptoms of syphilis given; bichloride of mercury and iodide of potassium to be employed later, should they be indicated.

[Considering the three affections, and the great debility from which this patient was suffering, would not a combination somewhat as follows have been more effective in attacking them all and not "dosing" the patient any more? R. Liq. hydrarg, bichlor, (O. B. P.), Tinct. ferri perchlor., in an infusion of quassia or calumbo, before meals; the quinine and arsenic in pill form between meals, iodide of potassium and local treatment as indicated.

Relative to general eczema, acute and sub-acute, with debility, anorexia, constipation, etc., I wish to give a formula which I have found very useful, in one case especially the effect was remarkable, the eruption subsiding within a few days, no local treatment being employed. A few months afterwards, the same prescription relieved the same patient quickly from a second attack.

R.	Magnes. Sulph. - - -	x drachms.
	Ferri Sulph. - - - -	xv grains.
	Acid Sulph. Dil. - - -	II drachms.
	Tinct. Calumbæ - - -	I ounce.
	Tinct. Capsici - - -	XL minims.
	Syr. Zingiberis - - - -	I ounce.
	Aq. Menth. Pip. - -	q. s. ad VI ounces.

Mix—Sig. one teaspoonful in half glass of water, two or three times a day.

Quinine and nux vomica can also be added, if necessary. Diuretics, especially potass. acet. in half-drachm doses and plenty of water, are much employed at the Bellevue Dispensary.]

ECZEMA EXFOLIATUM.

[That malarial poisoning may give rise to cutaneous diseases, was very strongly impressed upon my mind by a case I have very recently treated. Miss —— aged 17, had been in this State but a few weeks; last year, in Illinois, she suffered greatly from intermittent fever. Two weeks before calling upon me, she had "picked a little pimple on her chin," and this producing irritation, she had rubbed what she then supposed was glycerine upon it, but which proved afterwards to be, *she said*, carbolic acid. That evening a circular patch or stain appeared upon her chin, extending to the left; expecting it to vanish shortly, she was astonished to find another similar one, when she arose a few mornings later. Visiting now a physician, who certainly could have made no diagnosis, but ordered compound fluid extract of sarsaparilla, with nothing locally; the necessary time, (tertain type), again passed, and on the proper morning she saw a *third* spot, now well up the left cheek. A friend had her consult me, and I did not suspect malaria at that visit.

She was anæmic, slender, had no appetite whatever, constant constipation, tongue slightly furred, skin rather sallow, menstruation regular, felt languid, weak and had headaches. The eruption was not a "ring," but rather a rounded stain or patch, about the size of a silver half-dollar, (each patch), very red, slightly elevated, margins distinctly marked, the spots adjoined like the links of a chain, with a sensation of stinging, burning and itching. No vesicles or pustules were observable, still there was exudation, and upon the two first spots there were yellowish crusts, with broken, detached epidermis and much hyperæmia beneath. I prescribed the above given magnesia-iron mixture for her systemic condition, and a lotion containing bismuth, sub-nit, zinci ox., spirits camphoræ, liq. plumbi sub. acetat in aqua calcis.

This visit was on a Wednesday morning, and the following Saturday morn she came again, presenting the same identical lesion, this time in the centre of her forehead, and which had appeared the night before. The wash had much relieved the local discomfort, and the first portions were "drying up." The medicine internally had moved the bowels nicely; appetite was returning. I now became thoroughly interested, as it struck me as being a *peculiar*, unique case, to say the least. I questioned her very closely and soon learned that these "spots" appeared at regular, periodical intervals, always at night; that in the afternoons of these days she "felt badly," more languid, more headache with nausea, aching and soreness of the muscles and back, slight chilliness, but neither fever nor sweating.

I was now awakened to the "malarial" element in the case, and ordered quinia, thirty grains; ten grains to be taken at once, ten more that P. M., the remaining ten at six o'clock next morning; to continue with the original tonic, to have besides, three drops of Fowler's solution in water after meals. As she had experienced some difficulty in keeping the lotion well applied, I directed an ointment composed of somewhat similar ingredients.

The next Monday A. M., she presented herself again, another spot having come out the night before; this one, however, was insignificant compared with the others; it was situated above the right temple, well within the edge of the hair, was not near so hyperæmic, much smaller, with but slight itching or burning. She herself was in fine spirits, felt "splendidly, could eat as well as anybody." I directed a continuance of the treatment. She never called again, now several weeks ago, but I since have learned that that last patch (one just mentioned,) *was* the last, and that she seemed perfectly well in every respect.

The lesion observed in this case, is very concisely described on page 48, Cutan. and Vener. memoranda by Piffard and Fox, under the title given above.] M. A. W.

THE NON-SPECIFIC TREAMENT OF GONORRHŒA.

In the same number of the *College and Clinical Record*, Dr. Ronaldson, of Philadelphia, says: "the disgust expressed by some patients for the specific treatment, and the decided objection of others to be placed upon it, have influenced me in adopting the method described, and I have never yet had cause to regret it." The method is as follows: when the disease is acute, with intense, burning pain, or scalding upon micturition, and before the discharge is well-marked, have the constitutional treatment predominate over the local; restrict the diet, regulate the bowels, order rest if necessary, and give internally:

R. Potass. Acetat., - - - - ii drachms.
Uvae Ursi, - - - - - i ounce.

Mix—Sig. To be added to one pint of boiling water, and a wine-glassful (2 ounces) to be taken every two hours in flaxseed tea.

The penis to be kept well cleansed with hot or cold water, as most agreeable to the patient, containing a little salt or alum. This treatment having been continued for two or three days, he orders an injection: R. Zinci Acet. (vel sulph.) gr. vi; Glycerinae, ½ ounce; Aq. Rosae, 2½ ounces. Mix—Sig. Use three or four times daily.

The length of time to continue these measures, varies with the wildness or severity of the attack; in no instance has he considered that the disease had been prolonged, or, that he had been guilty of an injustice to his patients, in discarding the specifics. The point he lays greatest stress upon is the non-employment of an injection for two or three days, or until the acuteness of the inflammation has subsided and the discharge appears. It is stated that this internal treatment meets all demands, without producing the unpleasant effects—nausea, renal pain, cutaneous eruptions, etc.,—attendant upon the use of copaiba, cubebs and sandalwood oil.

[The above given treatment of gonorrhœa is excellent, *as far as it goes*, but if Dr. R. succeeds in really curing all of his cases of clap by these means, alone and unassisted, his experience has been a happy one. It is probable that the majority of physicians have a favorite method, or formulæ, for attacking this disease, but, again, I scarcely think that the majority by any means commence with injections, if at all, with very weak ones. Further, it is my impression, that if the majority of practitioners could be questioned upon the subject, they would state their inability to cure, *put a stop to the discharge* in this disease, *without* the so-called specifics; even they frequently fail and must be combined with other remedies internally, and the injections varied several times, both as to composition and strength. In the acute condition referred to by Dr. R., it would be difficult to find a more effective combination in

relieving the "ardor urinæ" than the one of extract of hyoscyamus, liquor, or citrate of potassa, one or both together, taken possibly in water or flaxseed tea; to them, (especially if the bladder be irritable), I generally add tincture of belladonna, all to be taken in half or a whole ounce of infusion of triticum repens. No sweet spirits of nitre nor buchu. At the same time any such weak injection as zinci sulph. gr. ½–1, to the ounce of the officinal liq. plumbi subacet. dil, with or without a few drops of "Majendie's solution," will do much towards lessening the local congestion, discomfort, discharge, if present. It is still better if the patient first wash out the urethra with a little tepid water, as well as by urinating. At the end of about four days, the scalding, itching, etc., has usually ceased, and the specifics can very properly be commenced with; if the local discomfort is still present, the first remedies can be continued a few days longer.

Since the advent of the gelatine and gluten capsules, the specifics are no longer the frightful remedies they used to be. Any one who has ever taken the old "Lafayette mixture," or others like it, must consider them a blessing indeed. The production of "renal pain, nausea, cutaneous eruptions," from the use of these capsules has come within the range of my experience but very seldom. They are combined in many ways, as can be seen from the advertisements of the American or French manufacturers. I usually employ those containing copaiba, cubebs and matico at first, two to four, an hour or so after meals; gradually "pushing" them from six up to twelve capsules during the course of the day, and as gradually lessening the number as the discharge becomes thinner, more scanty, less puriform. They should be kept up, four to eight daily, along with the use of a mild injection, for a week after the discharge is last seen. The usual directions as to diet, rest, etc., should be adhered to during this last week also. The disease, a slight purulent discharge at least, sometimes *will not* cease; still, before regarding it as gleet, (which affection we will discuss at some future time), it is certainly well to try the gluten capsules holding other ingredients, such as; rhatany, iron, alum, tannin, Norway tar, turpentine, cantharides, oil of sandal. They can be had in all combinations. A word about injections, for we must regard them as almost indispensable. Any patient who has suffered from gonorrhœa more than once, can usually be put upon the capsules at once and employ stronger "washes." We have many drugs to select from for this purpose, but my experience is entirely against the use of glycerine, the wine, extracts, or powder of opium and all tinctures, so commonly prescribed. I consider them as being of no benefit, if not actually injurious. In their stead we have mucilage, the watery solution of morphia and the fluid extracts, nearly all of the zinc, lead, silver and

bismuth preparations, borax, alum, golden seal, the bromides of sodium, potassium; the iodides of the same, as also of zinc, lead, ammonium; chloral, tannic and carbolic acids; quinine, calomel, mercurial ointment (upon a sound, or placed just within the meatus); the fluid extracts of hydrastin, catechu, matico, rhatany.

This list is by no means a complete one, but still it contains the names of the remedies most commonly employed, in various combinations, at the present time, in sub-acute and chronic gonorrhœa by our best practitioners. Several formulæ are here given by way of illustration chiefly, *not* that they are infallible, nevertheless they have been tested and usually *not* "found wanting." As far as I have observed, medical men do not view the "clap" with sufficient seriousness; it makes but little difference with the most of them whether a cure is promptly effected or not, the disease is a "nasty one," the patient "has no business to have it," prescriptions to be employed both internally and externally are scribbled off in a routine, hap-hazard manner, without any thought, judgment or reflection being exercised whatever. This is entirely wrong. We all know that its complications and sequelæ *can* become objects of *very* great concern and importance to both the patient and the doctor. If, at the time of the interview with the patient, the prescriber should feel uncertain as to just what he ought to do, uncertain as to the strength and composition of the injection, undecided somewhat as to the best internal medication, it is far better and generally convenient, to tell the patient that it will require an hour or so to prepare his medicine properly, for him to call at the drug store for it after a while, or, that it will be sent to him. In the meantime, let him, (prescriber), "think it over" well, "study it up" if necessary. The disease is well worthy of this trouble.]

"A useful injection in chronic gonorrhœa." (Bartholow.)

R. Aluminis, - - - - - - 1 drachm.
Zinci sulph, - - - - - ½ drachm.
Sodii biborat. - - - - - IV grs.
Aquæ rosæ, - - - - - - VIII ounces.

Mix.

[Should a thicker, stiffer injection be desirable, one to act somewhat "mechanically," the following will probably give satisfaction. I have used it for years.

R. Zinci iodid. - - - - - grs. V-VIII.
Bismuth subnitrat, - - - - grs. XX.
Mucilag. acaciæ, - - - - drachms IV-VI.
Aqua destill, - - - - - q. s. ad III ounces.

Mix—Sig. After each urination.

This must be well shaken, and if properly compounded, is of a beautiful orange-red color.

R. Sodii bromid., - - - ½ drachm.
Sodii iodid., - - - - - grs. xx.
Zinci sulph. - - - - - grs. x.
Liq. morphiæ (majendie). - - ½ drachm.
Liq. plumbi subacetat. dil. - - q. s. ad vi ouuces.

Mix. Sig. Shake well.

[Whatever be the chemical changes, if any, which will take place in this, it is effective.]

The *New York Medical Record*, for October 1st, 1882, gives the formula below, said to be the correct one for the celebrated French "Injection Brou."

R. Plumbi acetat., - - - - - grs. xv.
Zinci sulph. - - - - - - grs. viii.
Tinct. catechu, - - - - - ii drachms.
Tinct. opii aq. - - - - - - iii ounces.

Mix.

I have had no experience with it.

[The following prescription is a good one, not strikingly original, but illustrates further how the "changes can be rung:"

R. Zinci sulpho-carbol. - - grs. xii.
Acid carbolici, - - - - - grs. vi.
Sodii biborat, - - - - - grs. iv.
Ext. hydrastis fld., - - - i drachm.
Liq. plumbi subacetat, dil. - - q. s. ad iv ounces.

Mix. M. A. W.

URETHRAL FEVER. THE USE OF ACONITE AND MORPHIA.

In a report of his hospital service, (*New York Medical Record,*) a case of urethral fever was attended by Dr. Weir. It was of that form which occurs when the urine passes over the cut surface for the first time, rarely before. In such instances the temperature may rise to 104°, 105°, or 106°, rapidly falling next day. To prevent this rise, aconite and morphia are to be given in doses of three to five minims of the former to one-eighth of a grain of the latter. This is to be repeated after a lapse of two hours, and if necessary, a half-dose may be given at the end of two hours more.

This is done because the fever is nervous and due to irritation communicated from the wound to the nervous plexuses supplying the kidney, Dr. Wier's experience with quinine in these cases has been rather negative.—*Philadelphia Medical Times*, September 24, 1881.

BUCCAL ULCERATIONS OF CONSTITUTIONAL ORIGIN.

In the same number of the journal just above mentioned, a brief report is given of the Proceedings of the American Dermatological Association, fifth annual meeting, held at Newport, R. I., August 30-31 and September 1.

During the session, Dr. Edward Wigglesworth, of Boston, read a paper entitled as above.

These ulcerations are usually syphilitic in nature, though not always so. The fact that syphilitic ulcerations sometimes occur in persons above all suspicion of sexual immorality, makes it doubly important for the general practioner to recognize them by their appearance, without asking too many questions. The only maladies likely to occasion doubt in regard to diagnosis, are lupus and tuberculosis, and occasionally epithelioma. When tuberculosis exists with ulcerations of the fauces or palate, or both, the pulmonary symptoms are almost always far advanced, and even when they cannot be detected, the patient is sure to die of tuberculosis, and treatment is practically useless. In lupus, the local treatment is identical with that adapted to ulcerations due to syphilis.

The possibility, however, that the case may be one of either of these diseases, should always make the practitioner careful in expressing an opinion and considerate in his language, for the peace of a whole family is often at stake. In syphilitic ulcerations, stimulants are better than caustics. The parts must be kept well-cleansed, this alone affording great relief when the ulceration is pharyngeal.

The following solution for atomization was recommended:

R. Tinct. Iodini, - - - - parts v.
Glycerinæ, - - - - - - parts x.
Aquæ, - - - - - - parts xxx. Mix.

The bottle should be kept nearly full, so that the stream may not be kept up longer than is intended, owing to compressed air remaining in the bottle. Three or four applications, of twenty seconds each, will be sufficient to thoroughly cleanse and stimulate any ordinary ulceration. After spraying, iodoform mixed with a little powdered gum-arabic, should be applied with a camel hair pencil, or blown on to it by an insufflator.

Iodoform can also be conveniently deposited on the nasal mucous membrane, by letting the patient inhale a saturated solution of the drug in ether.

Some cases require the use of the nasal douche with disinfectants. A convenient formula is, one teaspoonful of chlorate of potassium, with one-third as much carbonate of sodium, and fifteen drops of a five-per-cent solution of permanganate of potassium, all in a quart of water at

25° C., used with a fountain syringe. A spray or a powder may be blown into one nostril, and escape through the other, if done while the patient breathes through the open mouth. A powder may be blown through the nostril into the larynx, by having the patient breathe through the nose. Constitutional treatment and all hygienic measures are, of course, necessary. For the lesions occurring late in the disease,—from the second to the twentieth year, and usually in cachetic subjects,—iodine must play a more important part than mercury.

Cod-liver oil, ferric iodide, potassic iodide, iodoform, and iodine spray,—these are the great remedies.

[The above, quoted from the journal named, is all that is given relative to the *diagnosis*, as taken from Dr. W.'s paper.

The original paper is, however, doubtless full and complete relative to this, the appearances presented by the lesions etc., of this *very* important class of affections. Owing to their situation, pain, often because they are visible to others, these lesions are, to the patient, most serious; and whether conspicuous or not, they are to the physician most important, frequently puzzling, for he must be able to diagnosticate the one from the other and satisfy the patient as well as himself. I refer not alone to ulcerations, or other lesions, of the cheeks, but also to those of the lips, gums, tongue, palate, throat.

ILLUSTRATIVE CASES.

Within the last few months I have had two patients, a young man and a young woman, in whom the primary, (syphilitic) sore was situated upon the lower lip. In the man the chancre was just in the centre, in the woman, on the right side of the lip close to the commissure. In his case I felt confident as to its nature, it was characteristic, typical; but as he was a moral young man, moved in the best circles and offered no explanations as to its origin, I asked him no direct questions and concluded to have my diagnosis confirmed by further symptoms, before ordering specific treatment. Succeeding, by the use of powders, ointments, etc., in quieting his mind sufficiently, the usual time expired, and he called one day to show me "some spots." I have never seen more fully developed, sharply defined, macular and papular eruptions than were then presented. The chancre was in about the same condition as at first, but with the use of mercury, locally and internally, he recovered nicely. Now had this patient been abruptly informed at his first visit that the sore upon his lip was most likely a chancre, (pox), that he must, however, wait six weeks or longer until it could be proven by other symptoms, he would have been scared, angry, insulted and probably gone to some other doctor who "knew something." By not telling him, the usual time slipped away, (although he became quite impatient because

that "cold sore" would not heal), and the cutaneous manifestations, together with sore throat, appeared in a very pronounced manner. These, together with the lip ulcer, convinced him and he listened resignedly to all that was necessary to be said. Here, the convenience and assistance afforded by a correct, early diagnosis, is evident.

In the case of the young woman, it was by no means easy to recognize the true nature of the lesion, and as she had not "the least idea why such a horrible sore should come on her lip," it was left for the doctor to ascertain for himself. It had points suggesting the possibility of epithelioma and I was about consulting one of my surgical friends as to the possibility of its removal, when it occurred to me that it would be well to first test the effect of mercury internally, with topical applications.

Hydrarg. bichlor. gr. 1-16, three times daily, and the brushing it over every day or two with a twenty-grain solution of nitrate of silver, healed it rapidly and soon afterward she left the city. I have learned since that she was the fond mistress of a wealthy gentleman, who never had had this disease, therefore he did not inoculate her. Very little talk on the part of the physician, to either one of this couple, as to her being so affected, would readily have caused "an unpleasantness." A little experimental medication quickly cleared up the diagnosis.

Of all these mouth lesions, (by "mouth" I mean all the localities before mentioned), however, I have experienced the greatest difficulty in diagnosticating those of the tongue.

To occasionally have patients call, complaining of and showing you nothing whatever but one or more fissures or "slits" upon the sides, tip or dorsum, with or without perhaps one or several abraded, "scraped" looking spots, some deep, others superficial, to receive from these patients negative answers to seven out of ten questions you may ask relative to the possibilities of their being syphilitic and finally, after careful physical examination, to find nothing absolutely of a specific character—these are the kind of cases to which I refer. All authors invariably state, "the clinical history, concomitant symptoms" etc., will assist greatly in reaching a conclusion, but all practitioners must meet with just such cases as I have described; cases in which the "history" is so very meagre, incomplete; in which all "concomitant symptoms" and lesions are so entirely absent, (I refer to syphilis alone) that nothing exists, to decide anything.

In as few words as possible, I will relate two instances. Not long since, when practicing in New York City, a celebrated spiritual medium whom I know personally, paid me a professional visit "What is the matter with my tongue? I must know positively whether it is a return of the old thing or not," he at once said. Upon the left side of his tongue, about midway, running transversely, there was a deep fissure. The edges

were perfectly normal, there was no induration, secretion, false membrane or slough. Within it looked red and raw, he said it was sore and tender. There never had been, to his knowledge any suppuration, abcess, or "breaking down of tissue." His teeth were good, tongue lightly furred; no other lesions were discoverable within the whole cavity of the mouth. I asked him every possible question and made a most searching examination of his whole body, relative to syphilis.

I felt compelled to decide that he had never contracted that disease, notwithstanding he had taken specific remedies, more or less, for years, merely because he had once had a "sore upon his penis and a bubo."

There are many middle aged and old men going through life who have labored under this same delusion with all its attendant mental torture, probably since they were eighteen or twenty years of age; the victims of medical ignorance and incompetency. It is so much easier to call every sore upon the penis "a chancre," so inform the patient, treat it possibly as such, and get the credit of "driving it all out of the system."

The patient lived high as to eating, drinking, use of tobacco, etc. I prescribed such remedies as I thought best for a man with such habits; laxatives, diuretics, stomachics etc., and made local application to the tongue with pencils of the nitrates of silver and zinc.

The fissure filled up in good season, no specifics were employed and he never complained again during the several years that I met him afterwards. Now the first point in this case is, or was, what caused this fissure? He had no dyspepsia, no manner of cachexia either inherited or acquired, had never been salivated. Even had any of these conditions existed, I do not at present think of any writer, who states that such conditions are ever the cause of deep, tender fissures of the tongue. Further, considering all the evidence obtainable at that time, it was my conviction that he was not syphilitic, and he rather compelled me to say yes, or no; but, neither at that time, nor since, have I met with any statement in medical literature which will enable me to decide at all conclusively, what the nature or origin of that tongue lesion was; whether positively, necessarily syphilitic, or not; if not, what other disease, local or systemic, can it be attributed to? His recovery without the employment of specific remedies would be held by many, if not by the majority of practitioners, to prove that this lesion was *simple* in character.

The second case was that of a young, married woman. Her statement was, that four years before, when single, a young man had kissed her *upon the chin*, and at that point a "sore" afterwards developed. How soon after the kiss she could not recollect. Although a rather novel mode of contamination, I accepted this tale, as she was evidently anxious that I should, without further criticism. She was accompanied by her mother,

and both of them seemed to be modest, intelligent, and of respectable appearance. There was no cicatrix at the point which she stated had been so vilely kissed. During these four years she had suffered but little from most of the symptoms of syphilis which I enumerated to her, although both she and her mother plainly expressed their belief that she had been inoculated with that disease. As she did not remove her clothing, and as there were no discoverable lesions about her face, head or hands, there was only her statement and the tongue lesions then present, (the *tongue* affection being that which she came to consult me about), from which I was to form an opinion. After due consideration of all the evidence obtainable, I concluded with them that she was so tainted.

The condition of her tongue was causing her much anxiety, (chiefly on account of her husband, who was in total ignorance of all this difficulty), and well it might, for it was *peculiar*. It actually looked as if some one had taken the small blade of a pen knife and carefully sliced it in many places, except that it was not raw nor bleeding. These fissures, probably as many as nine in number, large and small, deep and superficial, were all irregularly transverse, both upon the sides and dorsum; also, upon the dorsum, there were several abraded looking spots, (absence of epithelium), as if "scraped" by a pretty sharp instrument, as also two or three "cut out," excavated points. There were no buccal, lip or throat ulcerations, but enlarged papillæ towards the root of the tongue and an abraded spot at the tip. There were no sloughs, no pus, all these lesions looked bright and clean, but slight induration was noticeable.

The tongue was slightly coated, painful, tender. I regarded these "cuts" as fissures, the "scraped spots" as mucous patches, the "enlarged basal papillæ as mucous tubercles or papules, all more or less advanced in ulceration and syphilitic in character.

This young woman was cheerful, in good spirits; she had good teeth and digestion, no dyspepsia, constipation, nor menstrual irregularities. Had never been pregnant. Her skin was clear, natural, but the breath had a peculiar, offensive odor. She had been under the treatment of two physicians, of much reputation in this city, for one year and a half. From them she had derived no benefit whatever, her "tongue was just the same." she said. The first physician who had attended her had employed specific remedies pretty thoroughly, giving her the biniodide quite steadily in doses ranging from gr. 1-32 to gr. 1-8, and the potassic iodide in doses of from grs. v to grs, xxx, during a period of seventeen months. Locally he had applied nitrate of silver in solution once, the solid stick once, two applications during all this time.

The second practitioner she visited did not consider the affection as a syphilitic one; held these lesions to be due entirely to some derange-

ment of the stomach and bowels, and treated her actively with laxatives, bitters, acids and alkalies.

Seeing that she did not improve, he sent her to me. My treatment lasted but two weeks, at the end of which time the tongue was in a normal condition. I ordered in a tonic, pleasant mixture of bichloride of mercury, the dose varying from gr. 1-12 to gr. 1-32; beginning with grs. xx, and increasing by grs, v each dose, the dose of grs xc of the potassic iodide, three times daily in plenty of water, was soon reached; improvement having already set in, it was in the same gradual way reduced to grs. v, which was taken for a few more days and then stopped. I wish to remark, en passant, that such large and larger doses of the iodide are at times absolutely indispensable; but are not, by any means, to be given for weeks and months together, owing to the possible injurious effects upon the kidneys or other organs.

She came in every day or two and the tongue lesions were touched with either the acid nitrate of mercury, nitric acid, or fused nitrate of zinc, one or all according to condition found, The local treatment was, evidently, by far the most important in this case. Referring again to the question of diagnosis, here was a case presenting some difficulty; for there was nothing at all positive, certain, except the condition of her tongue; and, as before remarked, and in conclusion, will say, that the student will find it very difficult to obtain satisfactory information relative to this condition, when it exists alone and without any further corroborative evidence of this or that disease. Still, under the heading of apthæ, thrush, stomatitis, dyspepsia, syphilitic diseases of the mouth, tongue, etc., in all standard works on Practice, Diseases of Children, Diagnosis, Syphilis, besides several special monographs on Diseases of the Throat etc., the student will find much that is valuable, interesting and important.]

PYÆMIA AND SEPTICÆMIA. THEIR CAUSES, DIAGNOSIS AND METHODS OF TREATMENT.*

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To the operating surgeon nothing possesses a greater interest than the two diseases which have been selected for discussion this evening. In the experience of most of us gathered here to-night this subject brings up recollections of frustrated hopes, of untimely graves, of surgical skill carefully exercised, but of no avail. When we have lost some case which bid fair to recover, we have all doubtless searched the literature of the subject for a more keen insight into the causes which brought about our disappointment, and with regret have been forced to confess our search unsatisfactory, and our minds befogged by conflicting statements. It is not uncommon to find the terms "pyæmia" and "septicæmia" used as synonyms† both by professional brethren and by standard authors; and, if any distinctions are drawn, we are apt to find the basis rather one of degree than of pathological conditions. Respecting this point, Callendar very wisely says: "It is to be regretted that surgeons have not limited the term pyæmia to the class of secondary deposits traceable to mechanical causes. Now, that the term is held to include all cases of septic or puriform infection arising in the course of surgical injuries or diseases, it is loosely named as the cause of death in many cases, and surgeons differ widely in their experiences of a disease which admits such elasticity of application." Of late our daily papers have poured into the public ear long dissertations upon this subject—in relation to a case which was then exciting the most universal interest—and it is to be hoped that many of these did not directly or indirectly spring from professional

* A lecture delivered before the Anatomical and Surgical Society, of Brooklyn, N. Y., October 17, 1881.

† The term "systemic infection" is used by some authors as a synonym for septicæmia, while others employ the same term to cover the two conditions here discussed. It is this uncertainty in the use by authors of the names "pyæmia," "septicæmia" and "systemic infection" that tends to confuse the reader as to the pathological conditions of each and the distinctions to be drawn as to their symptoms and morbid anatomy.

sources. I have examined with some care the latest articles upon this subject, and most of those which have been incorporated in the more exhaustive treatises upon surgery—and I cannot but feel that in none to my mind is the subject so stated as to present what is known in its simplest form or to bring out those finer distinctions between these two diseases which I believe future investigation will sustain. With this short statement of my reasons, I will ask your attention to what I believe to be the essential points of difference between pyæmia and septicæmia, and the measures of relief which offer the best prospects of success in treatment.

MORBID ANATOMY.

Septicæmia is a condition unquestionably dependent upon a blood poison. It may occur whenever *decomposing animal matter* is brought into *direct contact with living tissue*, and then only. It is due to the direct absorption of such decomposing animal matter; and the intensity of the attack as well as the question of its results and duration depend absolutely upon the quantity absorbed. I believe that the *lymphatic vessels* are the vehicles in this case for the introduction of the poisonous material into the general circulation, and that the blood vessels are not directly concerned in the process. The effect of this type of blood poisoning does not seem to show itself in local points of suppuration—the so-called "metastatic abscesses"—nor are infarctions found in the viscera. The patient may die within twenty-four hours, if the poison be introduced in large quantities; but, if small quantities are gradually introduced into the blood, the condition may resemble a continued fever and recovery take place, if the infecting material be thoroughly removed in time. We have an admirable example of the conditions necessary to produce this condition in a case of retained placenta. Here the living tissue is found in the uterine walls; the decomposing animal matter in the placenta, which is no longer nourished; the actual contact between the two is insured, and the absorbent vessels are here abundant.* The woman developes a fever after sufficient time has elapsed for the transmission of the infecting material to the general circulation, without any concomitant symptoms of local or general peritonitis; and possibly dies if the placenta is not hastily removed, in which case a gradual return to the normal condition is the rule.

We see equally favorable conditions for the development of this disease exhibited (1) in all sloughing wounds, bed sores, etc.; (2) in

* Mackensie claims—MED. CHIRG. TRANS., vol. xxxvi—that the presence of lactic acid, if introduced into the blood artificially, may generate pyæmia, and he regards this as one of the possible conditions of the puerperal state when followed by evidences of blood poisoning.

gangrene, either of the extremities or of the viscera—especially in the lungs; (3) in large abscesses where the pus has decomposed—usually from the presence of openings admitting air; (4) when a dead fœtus is retained in the womb; (5) during an attack of diphtheria, when the sloughs are "in situ"; (6) in typhoid fever when the ulcers are covered with sloughing tissues; (7) when the bladder contains decomposing mucus mixed with residual urine; (8) when dissecting wounds are received; and (9) in many other similar conditions where tissues which are placed in contact with decomposing animal material are abundantly supplied with lymphatics.

The result of this form of blood poisoning seems to be evidenced by a diminution in the normal power of coagulation and by a dark color of the blood. The clot (in case any forms, after blood is drawn from the patient) is soft and breaks down easily; and the blood furthermore exhibits evidences of rapid decomposition when drawn from the body.

After death the salivary glands will often be found to be enlarged. The liver will be engorged with blood and appear œdematous, and the spleen will be softened. The heart will appear flabby; and all of the mucous membranes will be congested, relaxed and softened. There will be, however, *no evidences of metastatic abscesses or infarctions of organs*, and this, to my mind, is the characteristic pathological distinction between this disease and pyæmia.

During life, the jaundiced hue of the skin which is so common in pyaemia is less marked or absent.

Let us now hastily review the morbid anatomy of the affection so closely allied to septicaemia.

Pyaemia may occur not only when open wounds are present, and the conditions for absorption are fully developed, but also when no conditions which are favorable to the absorption of poisonous material can be detected. Thus we are forced to recognize two forms of the pyaemic condition. one of which is associated with an open wound or granulating surface, while in the other no open wound exists. In both of these forms we find *metastatic abscesses* of organs, tissues, or joints, after death, and, during life, the characteristic phenomena of pyaemia. In order to properly grasp the full details of the pathological changes in each of these two forms, it will be necessary to hastily review the mobid anatomy of infarction and metastatic abscess; since the latter usually occurs in the centre of an infarction as the result of its disintegration.

An *infarction* is a wedged-shaped spot of consolidation and discoloration within an organ dependent upon occlusion of a blood vessel and the subsequent rupture of neighboring capillaries. Whenever a vessel of an organ becomes occluded, the parts nourished by the occluded vessel are deprived of blood, until a collateral circulation is established. Now,

it is found that, after such occlusion, the parts which are at first deprived of blood become subsequently the seat of a rupture of the *capillary blood vessels* as the result of an excessive pressure produced by the collateral fluxion. Hence the infarction is wedge shaped, as a rule, owing to the distribution of the blood vessels; and its apex (corresponding to the seat of the plug) usually points towards the centre of the organ in which it is detected. These infarctions are very frequently met with, and especially so in the lungs, spleen, and kidneys. If the circulation is not speedily restored, the result of defective nutrition caused by the embolus is evidenced in one of three ways: either in *gangrene*—if the part be totally cut off from its blood supply; *fatty degeneration* and *absorption* of the embolus and blood coagula—if the nutrition be only partially cut off; or more or less extensive *suppuration*—if the plug in the vessel be derived from a suppurative focus or be septic in its origin. We usually find, therefore, that old infarctions are liable to appear pale, and to be firm and incompletely organized, provided that the character of the plug (an embolus or thrombus*) does not create suppuration; in which case disintegration takes place rapidly in the centre of the infarction, and an abscess results—"embolic abscess."

The more complete the obstruction the more vascular the tissue, and the less the vessels are supported the greater is the amount of infarction and the more rapid the softening and disintegration that ensues (Green's Pathology). Now I venture to assert that the development of "*metastatic*" or "*embolic abscesses*" is the distinctive pathological feature of pyæmia, and that no case can be properly so called when these abscesses are not found after death. It devolves upon me, therefore, to explain the mechanism of the production of suppurating infarctions in the two forms of pyæmia, previously described.

In pyæmia, if developed in connection with an open wound or granulating surface, I believe that an abnormal blood condition is developed; usually as the result of a miasm which is generated only in *decomposing pus*. If we accept either of the two prevalent doctrines—that pus is largely the result either of the transudation of white blood corpuscles—doctrine of Cohnheim—or of the proliferation of connective-tissue cells—doctrine of Virchow—we cannot find ground for the

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* I use these two terms in their proper acceptation. The term "embolus" covers all clots or foreign bodies in the circulation which are either moving with the current, or which, if stationary, have previously been transported by the blood to the seat of existing impaction.

The term "thrombus" covers only blood coagula, which are found within the calibre of a blood vessel, and which have been formed at the point where they tend to partially or completely occlude the vessel.

belief that pus alone,* when healthy, is capable of producing disease. The experiments of the older authors as to introduction of pus into the blood are now worthless as data for conclusions, since the pathology of pus formation was not then understood.

Decomposition of pus, however, brings in an element of danger which seems to carry contagion. All of us here to-night have doubtless seen a hospital ward suddenly become a pest house when a pyaemic subject has been once introduced into it; and, in spite of all measures, patient after patient will die, and reveal pyaemic abscesses at the autopsy. Such wards retain this capability of infection, even after the most thorough fumigation and the removal of all patients, furniture, and also often of the windows, for months.

Such facts in themselves indicate the presence of a miasm, whose nature we do not, perhaps, fully understand—any more than we do that of each of the eruptive fevers—but whose starting point seems, without doubt, to be in decomposing pus. It would exceed the limits of this paper to discuss the pros and cons of this subject; but I believe that little exception can be taken to the statement.†

Now, what becomes of this miasm and what are its results?

I believe, in the first place, that the miasm, so generated in decomposing pus, is *directly absorbed by the blood vessels*, and not by the lymphatics, as was the case with septicaemia.

In the second place, there seems to me but one way to account for the metastatic abscesses which follow its introduction into the blood—viz., to attribute to this miasm the property of creating in the blood of the

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* It is hardly necessary to-day, in the light of recent investigation, to dwell upon the theories of Gendrin, Gluge, Vogel, or the famous experiments of Sedillot, as to the action of pus upon the blood when artificially introduced, since the views of Cohnheim, as now accepted, place pus corpuscles and the white blood corpuscles as identical structures. To what extent the investigations of Dance, Donne, Sedillot, Majendie, Gaspard, Cruveilhier, and others, exhibit points of agreement or contradiction, may be attributed to the condition of the pus injected, since no two of these arrived at absolutely the same conclusions. Hughes Bennett has shown that the condition of leucocythæmia—where the white blood corpuscles are in great excess—favors the development of pyæmia; and it is also claimed by Callender that all conditions which seem to predispose to the pyæmic condition are likewise associated with a relative increase in these corpuscles. It is absurd, therefore to claim, even if we disregard the physiological processes which we know create variations in the corpuscular elements of the blood, that the discovery of an excess of white corpuscles in the blood of a patient is to be construed as evidence of the absorption of pus.

†Desault endeavored to trace the condition of pyæmia to some disturbance of the nervous centres—a view entertained by that author from certain observations made by him on secondary affections connected with injuries to the skull and its contents. It is safe to assert that our present enlightenment as regards the result of suppurative phlebitis and thrombosis of the cerebral sinuses effectually overthrows this theory.

infected a tendency toward *spontaneous coagulation* in the smaller vessels where the *current becomes extremely slow.**

In this way, a tendency to local obstruction in the small vessels is produced—and these plugs are properly "thrombic" in their nature, since they are formed at the seat of capillary occlusion; hence infarctions are subsequently formed from extreme collateral pressure at the seat of each obstruction, provided the vessels anastomose freely. Now, the clots which thus occlude the blood vessels are the direct result of a septic influence, and they are, therefore, septic in character; therefore a secondary suppuration occurs in the region of each thrombus and its accompanying infarction, resulting in an abscess.

It is quite possible for an open wound to generate the pyaemic condition by another process—which will be described later on, in connection with the second form of pyaemia—in which case miasmatic influencees may be absent; but I question if this mode of origin is not the exception rather than the rule in the case of open wounds. As this method of development—emboli developed from a "suppurative phlebitis"—will be considered in detail in its relation to those cases of pyaemia where no open wound exists, it is simply mentioned in connection with open wounds or granulating surfaces as one of the possible methods of origin when no decomposing pus seems to have existed as an exciting cause of the disease.

The second form of pyaemia need not *necessarily* be associated with a wound or a denuded surface It is always dependent upon some constitutional debility, and is usually caused by some form of traumatism sufficient to excite a local phlebitis.† Were it not for the fact that phlebitis is usually of the healthy or "adhesive" type in the strong and vigorous,‡ and that the blood coagulum formed in each vein tends to

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*This view is sustained by Bouillaud—ARCHIVES GENERALES DE MEDICINE—as well as Bouchut, since they state that the blood in these cases, whatever the condition may be, shows a tendency to coagulate during life on the slightest provocation, and then to undergo other changes.

† The investigations of Dumas, tending to prove the association of changes in the lymphatic vessels and glands with the secondary changes of pyæmia, are not sustained by the latest pathological observations, nor did his theory ever have many supporters. In the same list may be also classed that ingenious but unsustained theory of Fingers, that after the removal of some organ, as the testis, pyæmia is generated by the action of some retained material which was destined to be employed in the performance of the normal functions of the removed part.

‡ The pathological changes which occur in the veins, and with which I believe many of the cases of true pyæmia are associated, were pointed out early by Gulliver—MED. CHIRG. TRANS., vol. xxii—and they have received a marked confirmation in the researches of Bristowe, Callender, Virchow, and others. The case of a man who died four months after a fracture of the femur, and who revealed extensive coagula in the veins of the thigh—reported by Callender—illustrates the fact that open wounds are not essential to the formation of an extensive thrombosis. A similar case is reported in the St. Barthol. Hosp. Reports,

permanently occlude the vessel, and to become organized rather than to disintegrate, the development of pyaemia after such an inflammation, would be of common occurrence.

It may be a digression from the strict line of argument to here recite two cases which brought to my mind most forcibly the facts whose mechanism we are now to consider. Twice, in my own experience, has a case of contusion of the scalp—without laceration —been followed by apparent convalescence, when a severe rigor, fever and sweat has occurred again and again till death ensued. Metastatic abscesses were found at the autopsy of each, and the condition of pyaemia unquestionably had developed. Now.how are we to explain this condition? I do so as follows:

These patients were both addicted to alcohol and in poor physical condition; hence admirable subjects for suppurative inflammation. The contusion unquestionably excited a phlebitis of the diploe, which was accompanied by the usual clot-formation, but which assumed, on account of the condition of the patient, the *suppurative type*, and thus was followed by disintegration of the blood-clot. By this means floating particles of coagulated blood were washed into the general circulation, and, meeting vessels of steadily increasing calibre, they easily reached the right heart, and were thrown from the right ventricle into the lungs.

Those particles which were too large to pass the pulmonary capillaries became the cause of embolic obstruction in the lungs themselves. Those that succeeded, from their small size, in passing through the lungs, gradually accumulated fibrin from the blood-plasma until they reached a sufficient size to cause them to be arrested in other organs or tissues Now, as before shown, infarctions were thus created at the seat of each arrested embolus, and again suppuration was at once established in each infarction, since the embolus was of suppurative origin and, therefore, septic in its effects. We can thus account for the metastatic abscesses in the centers of each of the numerous infarctions, produced by the original particles which started from the veins of the diploe. But the process does not cease, it starts anew when each infarction suppurates, sending forth new particles from the disintegrating coagula of each infarction, and thus

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where a man died on the twenty-sixth day after an injury to the scalp; at the autopsy there was found to be an extensive thrombosis of the superior longitudinal sinus, and metastatic abscesses of organs. It was first noticed by Cruveilhier that secondary abscesses are especially prone to follow injuries to the bone structures, where the veins neither collapse after division nor tend to shrink firmly upon the clots which form within them, I quote the following sentence from Callender respecting this point:

"It is now known that the lining membrane of veins rarely presents evidences of inflammation; that it probably never secretes pus, and that the appearance of suppuration noticed in these vessels is in truth caused by softening clots."—Article in HOLMES' SURGERY, vol. i.

multiplying abscesses in other remote parts. If the patient should live long enough, there would be practically no limit to their number, and no portion of the body would escape them.

It is such cases as these that tend to press upon us the important clinical distinction which should always be made between an adhesive and a suppurative phlebitis. The former occurs in the robust subject, and its results are confined to the simple occlusion of the Inflamed veins; the latter, on the contrary, never occurs in the healthy subject, tends towards an extension of the inflammation from small to large venous trunks, is accompanied by suppuration and disintegration of the thrombus formed within the inflamed vein, and endangering the life of the patient by creating infarction and metastatic abscesses of organs—in other words "pyæmia."

The cases cited by me were those of injury to the cranium, and such cases are especially liable to be followed by a phlebitis, as the veins of the diploe are usually inflamed to a greater or less degree by any contusion over the cranial vault, but this method of origin of pyæmia need not be confined exclusively to such cases. Any open wound may be accompanied by a phlebitis of the injured part, and so may a contusion of any region of the body, even when no wound exists. Pyæmia need not, therefore, be always due to miasmatic influences, even when a large open wound exists, since, in spite of all local and sanitary precautions, a suppurative phlebitis may be generated within the injured part and the patient's life may be sacrificed in spite of all surgical precautions. In this pathology of pyæmia I differ somewhat, but not in essential points, from the latest views advanced. A careful study of the cases which have fallen under my personal observation, as well as a close analysis of the views of others whose experience has been more extensive, tends, however, to daily confirm my convictions. Time will not permit me to strengthen my position by a long array of dry facts and statistics, so I leave my views to you for respectful consideration and pass to the symptoms of the two diseases.

SYMPTOMS.

These two diseases have a list of symptoms which closely resemble each other, although I believe that certain distinctions may be drawn which will help the practitioner to distinguish them during life. Of course, the etiology will often prove a most important factor in the diagnosis, and a prevailing epidemic of pyæmia in a hospital or the history of a positive exposure of the patient to the miasm would also be of the greatest significance. As has been shown in previous pages of this paper, the absence of a wound does not preclude the possibility of pyæmia, since the lungs may unquestionably act as a means of transmission of the pyaemic miasm; while the

existence of a suppurative phlebitis does not necessarily depend upon an open wound,* although often associated with one. It must also be borne in mind that the two diseases may possibly co-exist, since there is nothing remarkable in a suppurative phlebitis being developed in connection with a general systemic infection from decomposing animal matter, nor is it beyond the bounds of possibility for the blood to be affected by two distinct conditions at the same time. We frequently see scarlatina and diphtheria co-exist, and yet no authors now claim that the two diseases are identical in their pathology or symptoms. It will help us in our study of the symptoms of these two diseases, to review first those of pyaemia, and subsequently to mark such points of distinction as may be safely regarded as especially diagnostic of the condition designated as septicaemia.

Pyaemic patients are attacked with a more or less violent fit of shivering,† which may have been preceeded by no premonitory symptoms, but which usually follows a diarrhœa, a hæmorrhage, some form of diffuse inflammation, an erysipelas, a phlebitis, or some form of injury. There is a general trembling and chattering of the teeth, the limbs are usually brought close to the trunk, and the surface temperature apparently falls, but actually rises in some instances. It becomes difficult for the patient to converse during the chill, and the speech is short and interrupted. The countenance is of a leaden or yellowish color, resembling that of approaching jaundice, and indicates to the physiognomist a sense on the part of the patient of great impending danger. All of the features seem small and contracted. The pulse becomes soft, rapid, and small in volume. In a longer or shorter space of time, varying from ten to fifty minutes, the surface temperature becomes elevated above the normal point—varying from 102°–105°‡—and a stage of tranquil perspiration follows the fever.

As the case advances, the fits of shivering recur; sometimes with perfect regularity, following the hour of the first chill, while, in other cases, the course of the chills is erratic. The same fever and sweat, as at the onset, follow each attack of shivering to a greater or less degree; the wound (if present) gradually shows evidences of unhealthy action in the character of its granulations and its discharges; the patient seems

* A case is reported by Tweedy where pyæmia followed a blow upon the thigh. Lee also reports a similar result from a contusion over the patella. Savory and Bristowe furthermore support this position, and thus sustain the embolic theory.

† After operations, the symptoms of pyæmia may commence at any time from the second day to the third or fourth week,

‡ The temperature of pyæmia seldom exceeds 104 degrees, and commonly presents distinct fluctuations.

exhausted by fatigue and develops the "*coma vigil*," with occasional periods of delirium, or passes into a deep stupor; the respirations tend to become shorter and more frequent; the inspiratory efforts are labored; gradually the breath acquires a sweetish or purulent odor; the joints often become the seat of suppuration, and fluctuate; the skin grows yellow, as if jaundiced, and day by day this discoloration deepens; finally, the sufferer often cries out with painful cramps in the side, distress in the calves of the legs, or articular pains.

Between the fourth and eighth day,* in a typical case, the evidences of the protracted struggle reveal themselves in the dull eye, the cornea of which has lost its lustre; the tremulous and rapid pulse; the development of subsultus in the arms and legs; the loss of power of the bladder, which fails to empty itself; a peculiar weakness of the voice approximating true aphonia; a dry tongue, with the lips and teeth encrusted with sordes; and an extreme emaciation of the body. Certain vague types of paralysis are occasionally developed during the latter stages of this disease. The lungs often exhibit the physical signs of an existing bronchitis or pneumonia; and the vesicular murmur is indistinctly heard as the air seems to be carried with difficulty to the alveoli. There is often pain about the head, and the patient, restless and irritable, fails to obtain accustomed sleep.

When any special portion of the body becomes the seat of local lesions, new symptoms usually arise which tend to point toward the part especially involved. If the nervous centres are implicated, delirium, rarely of a violent character, is often developed in connection with pain in the head, and the patient tends to grow heavy and drowsy, answering questions only when aroused, and then with indistinctness and some hesitation. Lesions of the thoracic organs are indicated by cough, dyspnœa, hurried respiration, pleuritic and pericardial pains, and often by a sense of weight in the region of the heart. An increase in the jaundiced condition of the skin and sclerotic, with hepatic tenderness, point to the liver as the seat of probable changes, and this is furthermore indicated when the patient develops a diarrhœa with copious bilious evacuations, as well as by stools consisting of undigested food, with a noticeable absence of bile. Albuminuria, and the occasional presence of either pus or blood in the urine, strongly suggest some renal complication. It is not uncommon to notice the development of dusky patches of skin, pustular eruptions, or the formation of boils, if the integumentary structures are implicated. A sudden complaint of pain on the part of the patient will often call the attention of the attendant to a joint swollen

* Patients have been known to linger for two, or even three months.

and rapidly increasing in size, but it is possible for several joints to be found painlessly implicated.

These are the most important symptoms which may be detected in a typical case; but, although they are none of them uncommon, we seldom find them all present. It will be well, therefore, to lay great stress upon the fits of shivering, the sudden and marked exhaustion, the icteric coloring of the skin, the labored and frequent respiration and the rapid emaciation, as of the greatest value in the diagnosis of existing pyaemia. Should the suppuration of joints and the development of abscesses appear with the symptoms above named, the diagnosis is almost absolutely certain.*

Now it may be asked, how are you to discriminate between these symptoms and those of septicaemia? I admit that positive distinctions are not always possible, if the case is studied alone from the standpoint of its symptomatology; but there are some diagnostic points which can generally be relied upon when the method of origin of the disease appears obscure, and when the presence of purulent deposits is not to be detected by any method of examination.

It has been my experience, from the study of quite a large number of cases of septicaemia, some of which have resulted fatally, that the first or initial chill is often the only one, and that this is never the case in pyaemia. Furthermore, in those cases of septicaemia where more than one chill occurs, those rigors which follow the initial chill are more erratic in their occurrence than in pyaemia, and are not always the precursor to a marked rise in temperature and profuse sweating. The course of this disease is also characterized by a higher temperature (103°–107) and a shorter duration than pyaemia, provided that the amount of decomposing animal material introduced into the blood is sufficient to produce death; but, if the quantity introduced is small, or the introduction very gradual, the patient may have a continual fever with a lower range of temperature, and eventually recover, provided that the poison be neutralized and the infecting material thoroughly removed. During the course of septicæmic poisoning, an effort is often made by nature to eliminate the poison by means of the intestinal tract; hence a diarrhœa of a profuse and watery character is sometimes met with in these cases.

As was stated in the morbid anatomy of this disease, the tendency to suppuration, which is so characteristic of pyaemia, is generally absent, and I have no hesitancy in stating that I have never seen a metastatic abscess at the autopsy of what I would designate as uncomplicated septi-

* Relapses in pyæmia seem to be a marked clinical feature: an apparent improvement often takes place and excites hopes of the recovery but the patient again sinks gradually with symptoms of a low febrile character.

caemia. When such abscesses are found, I would either be willing to exclude the septicaemic condition, provided the history of the case would permit me to do so, or I would regard the case as one complicated by pyaemia, if the history sustained the belief in previously existing septicaemia.

In summary, then, I would state that a marked chill followed by a decided increase of temperature and profuse sweating might, at the onset, suggest the existence of either septicaemia or of pyaemia, but I should be inclined to decide in favor of the latter if the chill was very sharp. If the initial chill should be followed by another, accompanied by fever and sweating, and, in a few days or hours, the same should be regularly repeated, I should be inclined to regard the case as strongly pyaemic in character. This opinion would be made almost a positive certainty if the exhaustion of the patient was rapid, the emaciation great, the breathing labored, the breath sweetish in odor, the skin deeply jaundiced, and if pus appeared in any of the glands, joints, organs, or other tissues. I should regard the presence of an open wound as strongly suggestive of pyaemia, rather than of septicaemia, provided that the wound had been properly cleansed each day, since decomposing animal matter would then have a small chance for prolonged contact with the injured part—an essential element, in my opinion, in the development of septicaemia. If the case terminated very rapidly—provided the conditions justified the possibility of septicaemia—I should be inclined to doubt the existence of the pyaemic condition. If the temperature ran very high—say up to 107° or 108°—I should regard the case as one of rapid septicaemic poisoning; but I should then expect a proportionately short duration of the disease to confirm the diagnosis. Finally, I should always be guarded—in the light of the pathological results of a suppurative phlebitis—in excluding pyaemia in favor of septicaemia, unless a most direct source for the absorption of decomposing animal material could be discovered.

TREATMENT.

The question of treatment of these closely allied affections must be decided, in almost every individual case, by special symptoms which are presented; but there are general laws of treatment which will apply to almost all of the cases met with, and which cannot be too strongly impressed upon the profession. While I have shown that in all cases of septicaemia or pyaemia an open wound need not necessarily be present, still no one can dispute the fact that in very many instances the treatment—which will, perhaps, do more to prevent the diseases under discussion than to cure them when developed—must be, in part, of a purely local character.

LOCAL REMEDIES.—In a large proportion of patients suffering from septicaemia, the seat of contact of the decomposing animal matter with living tissues can be reached, and the cause often removed in time to prevent a fatal result, even if the case be not seen in time to prevent the introduction of such poisonous matter into the blood But it is not enough, in these cases, to simply remove the existing cause. All surfaces which have been exposed to poisonous absorption should be thoroughly cleansed, and all existing germs destroyed by the use of disinfectants. The prospect of destroying poisons of this character by local measures is much less in old abrasions of suppurating wounds than in those of recent date; and all the greater care should therefore be employed in the general management of such sources of infection. I have frequently applied the actual cautery, fuming nitric acid, the solid stick of nitrate of silver, and other such agents, in order to destroy the tissue covering the entire surface of an old wound, and subsequently removed the sloughs by hot fomentations, rather than risk the danger of lurking germs of previously existing poison.

Among the different disinfectants* which have lately come into use, I have found few, if any, so efficient in destroying the germs of disease and decomposition, and so effectual in the quick removal of all odor as a solution of "Platt's chlorides" in water, in proportions varying from one to six to one to forty of water. It has, to my mind, a great advantage over the ordinary carbolic solutions in the entire absence of odor of its own, so that the presence of any offensive smell in the wound can be detected without being modified or disguised by that peculiar, and, to some, disagreeable odor of carbolic, and it seems to be equally efficacious as a disinfectant. But we must not rely too much on disinfectants, caustics, or other medicinal agents, since *frequent bathing* of the part, thus ensuring the complete removal of all foreign particles and accumulations of pus, as well as *perfect drainage* and *good ventilation*,† are essential aids to the successful prevention of systemic infection as well as to its cure when once established.

In the hospital ward, where the sick are crowded together, and in the private residence, where the escape of sewer gases often breeds disease, attention to the thorough disinfection of all the sinks, wash-bowls, privies, etc., as well as the complete closure of the overflow-pipes to

* Aerial disinfection by nitrous acid, the various ethers, etc., seems destined soon to play an important part in the prevention of septic poisoning.

† I am inclined to believe that patients can be saved from pyæmia by being placed in tents with free access to the air better than by any other means. In private dwellings the removal of the windows will answer perhaps as well, since the patient can be protected from inclement weather and cold by the use of blankets, screens, etc.

basins, which are seldom if ever washed by a stream of water flowing through them, may prevent, and sometimes also arrest pyæmic development. Much of the puerperal fever of the public hospitals can be traced, when an epidemic first appears, to the use of one sponge, syringe, wash-basin, etc., throughout the ward. The decomposing blood-clots in the vagina of one are thus directly carried from bed-side to bed-side, and, by means of utensils used without the proper cleansing, the fault of the nurse or her lack of knowledge spreads a pestilence and sacrifices life.

We have spoken, thus far, only of open wounds or abrasions, and the methods by which either the absorption of decomposing matter in direct contract with the wound, or of the pyæmic miasm present in the wound, air, bed-clothes, etc., can be prevented; but we have not considered under the head of local measures the relief of those varied conditions where collections of decomposing pus are long confined by the negligence on the part of the surgeon to establish evacuation, drainage and absolute purification of the cavity.* How cavities containing pus should be treated opens a large field for discussion, whether by incision and the insertion of drainage tubes, or by aspiration and compression. These questions can only be decided, in my opinion, by the circumstances which surround each individual case. As a rule, I believe that decomposition of any retained organic material does not progress until air is brought in some way in contact with the cavity which holds it; and I therefore think that, in those cases which admit of it, aspiration offers a better prospect of its complete evacuation without subsequent decomposition of the secreted pus than any form of drainage, no matter how perfectly the cavity is disinfected and cleansed. Still I know that many cases will not admit of its successful application, and, in such, I would advocate the most careful attention to perfect drainage and disinfection of the cavity. When long sinuous tracts exist through which pus is discharged from deep pockets, the early establishment of counter-openings and the insertion of drainage tubes, which shall perfectly empty all accumulations of burrowing pus, will tend to greatly lessen the danger of systemic infection.

General Remedies.—As soon as the presence of either of these diseases become known, it is the duty of the medical attendant (1) to allay nervous irritation by all means in his power; (2) to promote, if possible, the elimination of existing poison in the blood; and (3) to support the strength of the patient. It is well to always make inquiries as

* The development of septicæmia and pyæmia is often due to the fault of the surgeon or the attending nurses. Too great care cannot be exercised in preventing systemic infection.

to the general condition and habits* of the patient before adopting any special line of general treatment, since principles which hold good for all must be variously modified by the symptoms of individual cases for their special benefit.

To aid in elimination, in the first place, the patient should be kept warm and the free action of the skin encouraged by the use of diaphoretics. Of all diaphoretics I prefer the hot-air bath, although the vapor bath is preferred by some patients as more agreeable. These processes of possible elimination of the poison may also be assisted by the judicious use of medicines destined to stimulate the secretions of the intestinal canal, liver and kidneys. Calomel and jalap should be administered early in every case, where the possibility of systemic infection seems to be suggested, and bicarbonate and bitartrate of potash often proves of value as a renal excitant. It is claimed by some authorities that the stage of collapse is hastened by the use of diaphoretics and diuretics; but I have not found that such was the case, provided the employment of the drugs suggested was tempered with prudence. It cannot be disputed that reported cases of recovery can be adduced in support of the eliminative plan of treatment, but it is difficult to decide as to the actual value of this or any other line of treatment until the sources of scientific data are increased. In all cases, the cause of the systemic infection, if local, should be immediately removed.

It has been claimed by some observers that the internal administration of the sulphites and chlorides of soda and potash as an antidote to the poison has assisted in the recovery of the patient and the rapid elimination of the poison, but it is to be regretted that the experience of many of the most reliable authorities does not sustain their efficacy.

The intense *nervous depression* under which these patients so quickly fall, is best relieved by opium; and my own preference is for the use of small doses of Dover's powder, to be given at night, in addition to opium during the day if the patient's symptoms seem to demand it. If vomiting supervenes, the admistration of dilute hydrocyanic acid, iced carbonic acid water, or even small doses of chloroform will often check it. If a diarrhœa occurs, unless it be so excessive as to exhaust the patient, it should be encouraged rather than checked, as it may be an effort on the part of nature to eliminate the cause of the disease. The judicious use of quinine may also relieve nervous depression by increasing the general vigor and controlling the temperature.

* The influence of low conditions of the system on the character of inflammation within veins, has already been discussed.

A *tumultuous action of the heart*, accompanied by a sense of great uneasiness in the præcordium, and some *dyspnœa*, should suggest the employment of digitalis as a heart tonic; this drug is especially agreeable in its results upon such cases, since it increases the action of the kidneys * at the same time, and thus helps to remove the cause of the disturbance to the circulation.

Not least in the order of importance, is the *necessity of supporting the patient* during the progress of the disease. From the very onset, measures of this kind are required in most cases, and stimulation as well as some form of tonic treatment will generally be demanded. The quantity of stimulants to be administered, as well as the time when their administration should be commenced, vary so much in individual cases and depend so much upon general principles of treatment, that it is hardly necessary to consider them in detail here; but I believe that the quantity given should be small and often repeated, and that the stimulants should, as a rule, be given with as light and nutritious food as will be borne by the patient without exciting nausea or vomiting. In these cases, the pulse is not a valuable guide to the administration of alcohol, since the circulation is under the influence of a subtle poison, and gives constant evidence of its effects.

The *great danger of relapses* in pyaemia naturally suggests that the period of apparent convalescence should be associated with every element of precaution to ensure renewed vigor. A change of scene, a cool, bracing atmosphere, free from all malarial influences, the internal administration of iron, and a continuance of stimulants in proper doses will all assist in bringing about complete recovery.

We have so far discussed the treatment of both pyaemia and septicaemia as varieties of systemic infection, but, as has been stated in previous portions of this lecture, the danger of pyaemia, when fully developed, is to form metastatic abscesses in organs, joints and other tissues. If the case be one of that type dependent upon a suppurative phlebitis, the patient must have been in a bad general condition at the time that such suppurative inflammation was excited; hence all the more necessity for stimulants, tonics, etc., if we hope to arrest the process before emboli are formed. Great *physical depression* after any form of injury should put us on our guard as regards the possibility of this complication. No local treatment can prevent the formation of these secondary abscesses (although Hunter recommended pressure upon the vein inflamed above the seat of the morbid action) provided that emboli are once formed by the disinteg-

* The diuretic action of this drug is purely mechanical, since it acts upon the kidneys by increasing the power of the heart.

ration of the thrombus within the inflamed vein. It is this distressing statement that leads all of us to regard the question of prevention as one of paramount importance. The success of an operation often depends upon the skill of the surgeon in building up the constitution, changing the character of the secretions by the proper use of alteratives and tonics, regulation of the diet, and, if intemperance has existed, in so diminishing but not withdrawing alcohol as to promote a more healthy mode of life.

No surgical operation should ever be attempted without a thorough examination of the condition of the internal organs, where such a step is practicable. The urine should be searched for albumen, sugar and casts; the thoracic viscera examined for lurking disease; the abdomen explored for aneurismal or malignant growths, and the size of the various abdominal organs carefully mapped out by auscultatory percussion. Chever lays great stress upon the advisability of subjecting patients about to undergo a surgical operation to restraint in bed for some days before the operation, in order to prepare the patient to the change of life which the operation will demand until convalescence, and I believe that the suggestion is one well worthy of the serious consideration of surgeons.

Whether chloroform or other anaesthetics subject the patient to additional danger from pyaemia by their depressing influence, is still an open question. That they do lessen the reaction is unquestioned, but do they not also diminish the shock of the operation?

Finally, all precautionary measures as to the carrying of infection by the nurses or medical attendants should be most carefully guarded against. This danger is, of necessity, greater in the hospital ward than in the private dwelling, on account of the confined air and the frequent overcrowding, but it may still prove a source of great danger where least expected. Scrupulous attention to a frequent change of bed-clothing, and the prompt destruction of all dressings after removal, will tend to lessen the possibility of this mode of propagation.—*Annals of Anatomy and Surgery.*

THE HEREDITARY TRANSMISSION OF SYPHILIS.

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INTRODUCTION.—The heredity of syphilis, ever since first having come to the knowledge of physicians, has been and is still, up to the present time, one of the most contested subjects in general medicine. But, notwithstanding the manifold discussions and richness of literature, which can be found in connection with but few other medical questions, the advance made in this direction is scarcely noteworthy, and we can say to-day, as we could ten years ago, that there is hardly a point, apart from the mere question of existence, upon which contradictory opinions do not prevail. On the contrary, rather, we can note in certain respects a retrogression; because, propositions, which were apparently overthrown, have been recently brought again to light, and supported with great zeal.

As I have, for a long time past, made hereditary syphilis the subject of deep study, owing to my abundant material for observation and careful analysis of most of the literature pertaining to this subject, I am now in a position to place on record the result of these investigations, chiefly in relation to the question of heredity.

I. *History and Past Views upon the Heredity of Syphilis.*—It is quite natural to suppose that, not long after the first appearance of, or rather after the first historically known epidemic of syphilis, in the last decades of the fifteenth century, the same disease was observed by physicians in newly-born children. But, even among the earliest writers upon this subject, we find decided views upon *acquired* syphilis in children, it may have been for the reason that they only observed such cases, or that they held hereditary syphilitic affections to be acquired. Paracelsus (1558) is the first who, according to general opinion, speaks

distinctly of hereditary syphilis; Fernelius (1574) also held this view of the origin of syphilis, as opposed to that of infection, but neither of these writers goes beyond general remarks. The first reliable records, which undoubtedly state that children were observed with inherited syphilis, we find in the writings of Fallopia (1564) and Rondelet (1560). Already, or at about the same time, Augier Ferrierus had spoken of a two-fold manner of heredity, viz., through fecundation and through the diseased secretions of the mother; Ambroise Pare had also observed the inoculation of nurses by children with hereditary syphilis.

The inheritance of syphilis was well known to writers in the seventeeth century, but still no progress was made in the study of the same. In the eighteenth century the subject was more deeply investigated by Boerhaave, Van Swieten, and Astruc. The latter made likewise a distinction between inheritance through the semen of the father, and transmission by means of the secretions of a syphilitic mother; habitual abortion in consequence of syphilis in both father and mother was also recognized by him. At the end of the same century, a hospital (Vaugirard) was erected in Paris for the reception of syphilitic pregnant women, and syphilitic children with their nurses, which afforded the physicians Doublet, Mahon and Bertin, abundant material for observation. By them, the first endeavor was made, not only to furnish a symptomatology of this disease, but also to throw more light upon the conditions of its inheritance. At this time the opinion universally prevailed that syphilis could be inherited by the child from the father, as well as from the mother. The regular course of investigation was, however, already interrupted by the new theories of Hunter (1768), whose work upon syphilis created much contention. As he claimed to have established by experiment that only the primary sore, and not the secondary lesion of syphilis, could inoculate, consequently, inheritance from a syphilitic individual, in the secondary stage, should also be disclaimed; in this last respect, he succeeded in a complete denial of hereditary syphilis. As the heredity of this disease in the new-born was incontestible, he admitted on the one hand that a mother with primary syphilis could transmit the virus to the embryo directly through the circulation; on the other hand, he expounded the doctrine that, where the appearances of hereditary syphilis were undeniable, he regarded not only these, but also the disease of the mother, as deceptive forms, which should not be confounded with true syphilis. In fact, we find minutely described in Hunter's works the most remarkable cases of syphilis and its heredity, accompanied at once by the declaration that, after all, these cases have really nothing in common with syphilis.

Coming from such an authority, the pernicious influence of these errors was at once felt. Even syphilographers like Girtanner (1788), as also specialists in diseases of children, like Wendt (1822) and Henke (1818), denied in the most positive manner the hereditary transmission of syphilis, and believed only in the *infectio per partum*, that is, in the direct inoculation of the child during labor from a primary ulcer upon the genitals of the mother—an opinion which still, in the year 1846 (Kluge), and in 1854 (Pauli), had its followers. Ricord also accepted the Hunterian doctrine of the non-transmissibility of secondary syphilis, and supported his views with all the power of his language. Even if he did not deny the heredity of syphilis, still this incomprehensible error occasioned a constant, Proteus-like vacillation in his opinions upon the question of heredity, and increased the fallacy in relation to this subject to the greatest degree. He granted on the one side the possibility of heredity from both parents, but required that the period of incubation be passed after birth; that primary syphilis in the parents should be regarded in the child as secondary; secondary syphilis in the parents as tertiary; and tertiary symptoms should appear in the child as scrofula. Finally, he supported the view of a retrogressive inoculation of the healthy mother by the diseased fœtus—mere hypotheses, which, as we shall see from an examination of the facts, have not the slightest foundation.

Already, at the beginning of the century, the dispute had arisen, even among those writers who recognized as a fact hereditary syphilis in unborn children, as to the share which the father and mother had in the transmission of the disease. The most extreme opinions soon prevailed, and, while Swediaur (1805), Colles (1837), and others asserted the inheritance as coming exclusively from the father—a view also held more recently by Mayer (1851) and Bednar (1853), and represented by the doctrine that constitutionally syphilitic women were absolutely sterile—there arose, on the other side, a party which denied the transmission of syphilis from the father to the child, and considered it as coming exclusively from the mother.

This last view was contested, in the beginning of this century by Hufeland, Vassal, and Beyer, obviously as a continuation of the Hunterian doctrine. Hufeland even said distinctly that syphilis was communicated in the same manner as, for instance, variola; while Beyer restricted the transmission positively to the last three months of pregnancy, evidently in consideration of the usual period of incubation. This doctrine had very nearly again become questionable, when, in 1854, Cullerier (nephew) brought it again to light, defended it strongly, and found very soon in Notta (1860), Follin (1861), and Charrier (1862) equally zealous

supporters. Cullerier (1866), also, in his most recent works on syphilis, maintains this view most radically, and, in a recent discussion (1873) of the Paris Academy of medicine, Charrier defended the stereotyped arguments of Cullerier, notwithstanding the contrary experience of the whole academy. This theory met with but few followers outside of France; in Norway, only Oewre accepted it entirely, and endeavored to maintain it in three articles which appeared from 1868 to 1872.

Although almost all other writers of that period, excepting those dissenters last mentioned, are unanimous in their opinion of the heredity of syphilis from both parents, this unanimity ceases immediately when certain special questions are in consideration. While, however, the great majority are of the opinion that the syphilis of the father is transmissable to the fœtus without affecting the mother, there are to be heard on the other side important voices, which acknowledge heredity directly from the father, but argue that, in all, at least in almost every case, there is also an infection of the mother. This infection itself is produced in quite different ways, according to the various writers. There are those who impute it to the repeated influence of the semen on the female genital tract (Behrend, Knoblauch); others believe the mother to be infected by syphilitic spermatozoa at the time of fecundation (Baerensprung, Geigel); the majority believe in a communication of syphilis to the maternal organism during pregnancy from a fœtus already contaminated through paternal agency; then, again, there is one party of the opinion that this transmission occurs, at least in the majority of cases (Colles, Diday, Hutchinson, Rosen, and others), while the other party hold this manner of maternal affection to be possible, but do not deny that the mother may frequently be entirely spared (Ricord, Vidal, Tyler Smith, Fraenkel, Baumler).

A greater unanimity exists in the views of writers, even if, unfortunately, not favorable to the truth, upon the question, whether a fœtus, healthy at the time of conception, may become syphilitic or not, the mother having contracted syphilis during pregnancy. This mode of the transmission of syphilis is regarded as possible by almost all writers with but few exceptions (Mandon, Behrend, Baerensprung, Geigel), and is accepted *in toto* as self-evident by the majority, without further confirmation. Only a few, however (Cullerier, Oewre), regard this mode of transmission as unconditional, and hold that it may occur during any month of pregnancy. All the others acknowledge that women who have become syphilitic during pregnancy may also give birth to healthy children, and lay down, more or less positively, laws concerning the time of transmission and non-transmission. Byer and Rosen believe in transmission during the last months of pregnancy, and the immunity of the

fœtus during the first months. Ricord, Gamberini, Zeissl, Bidenkap, Kobner, and many others, ho'd just the reverse opinion as to the time of infection of the fœtus, considering it only possible in the first half, or in the first two-thirds, of pregnancy. Diday, finally, regards it only as possible in the middle months of pregnancy, while during the first and last months infection does not take place; in a word, the confusion in regard to this point, as in most of the others, is almost unprecedented.

Should we now inquire how it is possible, and by what means it may be explained, that so many different opinions, evidently for the most part false and diametrically opposed to each other, can be of any value in regard to an event occurring as frequently as the hereditary transmission of syphilis, and which, since its recognition, has so very greatly interested the medical world, we must attribute it chiefly to two faults in the previous consideration of this subject.

1. The crude, empirical method of procedure in the examination of the various questionable points. There was certainly never a scarcity of theories, but these theories were always deduced from a very limited number of correctly, or incorrectly, observed and recorded cases, taken from a narrow field of observation; and with a theory already constructed all further observations were made rigorously to accord. Further, the principal and fundamental arguments in relation to the process in question, and the various possibilities connected with the inheritance of diseases in general, were entirely overlooked. So it happened that most writers confounded completely, one with the other, the spermatic and ovular heredity upon the one side, and the placental infection of the fœtus upon the other; or, when they made such a distinction, they almost universally held these two opposing views as equally correct, viz., heredity through the semen of the father, and the placental infection on the part of the mother, ignoring entirely the ovular heredity.

2. The partiality of observation and the consequent incidental accumulation of sources of error which, apart from this, are sufficiently difficult to avoid, such as intentional or unintentional deception on the part of the parents; the absence of the important link in the chain of inheritance, most frequently in relation to the father, and almost always concerning previous brothers and sisters, etc.

The material for the study of the affection with which we are concerned is divided almost equally between syphilographers, obstetricians, and specialists, and to each one of the specialists this subject of heredity appears in a different light. This is best illustrated in relalion to a certain point, viz , that of maternal immunity. Here we have the very remarkable and so natural occurence, that those who deny the immunity of the mother are, without exceptions, syphilographers of note (Hutchinson,

Cullerier, Sigmund, Zeissl, Oewre); while, on the other hand, merely to mention the extremes of the subject, physicians to foundling asylums and directors of children's hospitals (Bednar, Mayer, Schuller, 1864) will only grant that syphilitic children can be descended from healthy mothers. The first see in practice and in their lying-in chambers, almost exclusively, syphilitic cases of pregnancy, because it is certain that a non-syphilitic, pregnant woman never enters the syphilitic division of a hospital, nor does she consult a specialist in syphilis; again, physicians to foundling asylums, and children's specialists, have frequent opportunities for observing a sound, healthy mother with a syphilitic child. This antagonism is easily explained by the one sidedness of observation.

It is, therefore, necessary, if we undertake to explain this intricate question, to obtain, before everything else, a correct view of the course of the heredity of diseases in general on the one side, and to examine into, and advantageously make use of, on the other side, an ample and extended field of observation, according to the theoretically conclusive points at issue.

II. *The Theory of Heredity in General, and Application of the same to the Heredity of Syphilis.*—As deficient as we may be in our knowledge of procreation, and as many problems as there may be still to solve, it is nevertheless the reward of modern natural science to have divested this process of the mystery with which it has until very recently been clothed, and to have proved it as belonging to the list of purely material organic processes.

"The nature of fructification rests essentially upon the truth that the male procreative cell becomes *intimately blended* with the female amœba-like ovule. By this means, the ovule is, in the first place, incited to further development; and, secondly, it induces the transmission to the child of the hereditary qualities of *both parents*. The male procreative cell entails upon the child the individual character of the father, and the female ovum transmits hereditarily to the new being the characteristics of the mother" (Haeckel).

This process is repeated in its entirety in the same manner, beginning from the very lowest organism, as soon as a distinction of sex has become established, until we reach the mammalia and the human race; and heredity occurs in each case as a result of the generative cells of the male transmitting the qualities of the father to the newly-created being, and those of the female the attributes of the mother. In this sense, the heredity is immediately consummated at the moment of union of both cells of procreation. Therefore, this power of transmission from both parents is entirely and wholly the same, and there is really, in fact, no special difference, more nor less, in the contribution which the father and

mother, through transmission, impart to the new being. All the physiological characteristics which are transmissible (at the most, those qualities excepted which relate to the organs of generation themselves) *may* originate equally from the father and from the mother. It is certainly a fact that, in every procreated individual, the share of both in the heredity is unequal. It may so happen that in a certain case the external form, height, color of the hair, and skin, may resemble more those of one parent, while the mental faculties and special talents or gifts more those of the other; but it must be acknowledged that, in general, both father and mother are equally capable and qualified to transmit each and every one of their physiological characteristics to their offspring.

These qualities are, as is well known, not at once perceptible in the new individual, and are for the most part not even present; still, it is undoubtedly true that we might recognize the new creature already in the fecundated ovule, or, possibly, not until after birth. A physiological peculiarity may then remain entirely latent during a more or less lengthened period of time, and in the human race throughout many years.

All that has thus far been said is equally true of pathological peculiarities, which are, by the-way, separated from the physiological qualities by but a very narrow limit. In the same manner as the generative cells, separating themselves from the maternal or paternal organism, have the power of transmitting physiological qualities, the same cells, as an integrant part of an unhealthy parental organism, may, in like manner, have the power to communicate a disease to the being originating from the union of both cells. Consequently, we must here accept from the beginning the view that a disease, which can be in general transmitted in this way, must be in the same manner communicable from both the maternal and the paternal side. In fact, experience teaches us that, in regard to this, there is absolutely no difference. We know that phthisis and scrofula, carcinoma, diseases of the blood, gout, mental diseases, and epilepsy —yes, even anomalies of single organs, such as faults of accommodation of the eyes and of special tissues, like the absence of pigment in albinismus, ichthyosis, etc.—may be transmitted in this manner, and that the unhealthy father, as well as the unhealthy mother, may transmit to the new individual, even after many years of latency, through the medium of the progation-cells, each and every one of these diseases and anomalies, and the power required to develop the same.

Meanwhile, we must also state here positively that not *all* diseases are transmittable in this way; that the number of diseases in the above-mentioned list, which may be transmitted by the procreative cells, require only a limited number of others to render it complete, and that the larger number of all other diseases cannot be inherited in this manner.

This is not only the case in all acute diseases, but also in many that are chronic. In order to illustrate this negative assertion, and before discussing this question, we must have satisfactorily proved to ourselves everything in relation to the father. No one would think that a man, suffering, at the time procreation was effected, from rheumatism. intermittent fever, scurvy, Bright's disease, etc., could in any way communicate either of these diseases to his offspring. This holds good of all acute, infectious diseases, and it is really unnecessary to say that a transmission of typhus, variola, scarlatina, etc., from the father to the child, by means of the semen, does not occur. If, then, this is the case, so is also to be rejected that which is analogous in relation to these affections, viz., ovular transmission on the part of the mother, which we have found in all respects to be identical with that of the spermatic on the part of the father,

The analogy in the share of parental heredity is only a complete one at the moment of union of both procreative cells. So soon as this union is affected, the analogy ceases. The paternal influence is concluded at this moment, but the united cells (the fecundated ovum), at least in the higher animals and in the human race, enter now into a new relation with the maternal organism, which continues, according to the further development of the new existence in the different animals, throughout a different period of time. It is now our task to discuss the influence which the mother may have upon the fecundated and developing ovum during pregnancy.

The mother supplies the fœtus with the material for its further development, through the utero-fœtal interchange of secretions; there are established an endosmosis and exosmosis of fluids and gases between the rapidly growing circulation of the fœtus and the vascular system of the mother, and this new being, created as a result of the act of procreation (or uniting of the cells), employs this material for the evolution of those physiological and, eventually also, pathological features or peculiarities which it has inherited from its parents through the agency of both these cell forms. Can, now, the mother communicate to the newly-developing individual, by means of the utero-fœtal and, later, of the placental circulation, any one of those qualities which this being might receive through the medium of the cell of procreation? Can she transmit to it a bodily or mental faculty, or the developmental capacity for the same? There is nothing which could lead us to such a conclusion. She can, through the adoption of a rich, nutritious diet, promote the development of the bodily capacities imparted at the time of procreation; or, through a scanty nutrition, she may hinder their development; but, of heredity, in the sense in which we have thought of it, viz., in the union of the sperm cell with the ovum, there can be no question.

This does not, however, exclude the fact that the transmission of a disease from the mother to the developing fœtus may take place through the placental circulation, exactly resembling the effect produced upon the fœtus by the administration of a mineral or vegetable poison to the mother; and this is especially the case regarding several alkaloids. In fact, such a transmission is demonstrated in the acute exanthemata, especially in variola, and also in scarlet fever and measles; and it is further, to say the least, theoretically conceivable in relation to the remaining acute infectious diseases, for example, typhus, although this has not yet been positively observed.

It is manifest, how widely different this transmission of a disease to the foetus during pregnancy is, from the heredity in a more contracted sense, that is, transmission through the medium of the semen or germ cell. While, in the last case, the parental organism gives, as a part of its own being, the germ of the disease to the procreating cell, so, in the other case, a fœtus, the result of a perfectly healthy conception, may, in the course of its intra uterine development, frequently but a short time before birth, become diseased; for the reason that the endosmosing fluids and gases passing through the placenta may communicate a poison which affects it, and requires probably the same period of incubation as if the poison were incorporated into the being after birth, say through the atmosphere.

The transmission of a disease to the child unborn is, consequently—in order to sum up the above—possible in two ways:

Upon the one hand, through the semen or ovum, of equal importance in both parents—*heredity in a proper sense.*

On the other hand, through the passage of a poison from the maternal to the fœtal circulation—*infectio intra uterum.*

If we now apply the conclusions arrived at in this general discussion, as regards the question of the heredity of syphilis, there arise at once the following note-worthy points:

If syphilis be transmitted at the time of conception, the cell of procreation is consequently already imbued with the syphilitic poison; and thus both father and mother can transmit syphilis to their offspring in an entirely analogous manner, either the one or the other, or else both at the same time (such as would likely be the case in tuberculous parents).

Should the placental circulation be the medium of transmission, the originally healthy fœtus would be inoculated *intra uterum*, and the mother, therefore, would be the only and original source of the hereditary syphilis, the father having absolutely no connection with the disease of the child; while it is entirely immaterial to the child whether the mother has acquired syphilis from the father or from any other source.

Still a third form is certainly to be considered, viz., whether both modes of infection are not possible. In relation to this opinion, there are presented very important considerations.

In the first place, such an alternating inheritance of a disease would stand entirely alone in all pathology. There is no disease which can be inherited through procreation, and which at the same time can be transmitted to the fœtus by means of intra-uterine infection.

Much more important is the consideration that it is impossible for two processes, which differ so greatly one from the other, to produce the same effects. This effect is, however, not simply a syphilitic inoculation of the child, but an entirely peculiar affection, which stamps its seal on the new being from conception, alters its development and growth in the most thorough manner, and, with acquired syphilis, that is, with that disease which arises from the effect of the syphilitic poison upon a previously healthy individual, is not only not identical, but, on the contrary, differs from it in the most decided way. These differences do not depend in any way upon the susceptibility of the infantile organism, because, if a healthy child beeomes inoculated with syphilis shortly after birth, its illness differs in no way, although developing in a child but a few weeks old, from the syphilis of adults; but a great difference is perceptible between its condition and the *inherited* syphilis of another child of the same age.

It is not here the place to discuss at length the fundamental distinction between acquired and hereditary syphilis, for the reason that this will be apparent as a result of the exhaustive description of the latter, which we propose to enter upon. We will now, in a brief manner, state preliminarily, several of the most striking differences.

1. The early development of the deeply seated visceral lesions, which *may precede* the eruptions upon the skin by several months, and their beginning, especially gummy growths, which have already been observed in an advanced stage of retrogressive metamorphosis in premature births of six months, and which we must necessarily consider to have originated in the earliest months of fœtal life.

2. The highly characteristic affection of the calcifying cartilages and growing bones, at the union of the epiphyses with the diaphyses, with which, in the multiplicity of their points of development and premature (often intra-uterine) commencement, there is absolutely nothing to be found analogous in acquired syphilis.

3. The diffuse syphilitic infiltration of the skin, especially in the palms of the hands and on the soles of the feet, then on the face, and most of the remaining portions of the skin, which is never observed in acquired syphilis either in childhood or at a later period, but which im-

parts its characteristic stamp to hereditary syphilis, peculiarly noticeable even upon slight examination.

4. The very frequent occurrence of vesicular syphilides, particularly in the more severely affected children, which, by the way, are not always entirely absent in acquired syphilis, but which at the same time are exceedingly rare, and have never been described as occurring in the acquired syphilis of childhood.

5. The prodromic coryza of hereditary syphilis, etc.

Is it now imaginable that a disease of such peculiar character as hereditary syphilis would owe its existence to two such entirely heterogeneous processes? I believe that such a supposition is to be denied *in toto*. It seems much more probable that such a deeply-seated constitutional disorder can only have its origin by means of actual inheritance, and not through the transmission of the specific virus to a healthy embryo in an advanced stage of development, because such an intrauterine infection cannot differ very greatly from an infection taking place immediately after birth.

Theoretically, we now arrive at the following preliminary conclusions: That the disease which we call hereditary syphilis can, logically speaking, only so arise that *either* the sources of procreation (spermatozoa or ovule) holding the syphilitic virus must, from the beginning, furnish the conditions for their development; *or*, that the fœtus, healthy from the time of conception, becomes infected with the poison contained within the maternal nutritive fluids; that the facultative effect of both heterogeneous processes, producing a similar final result, is very improbable; and that, finally, of both these modes of origin of the inheritance of syphilis, the first, viz., heredity in a true sense, has the greater real probability.

To begin with, it is scarcely necessary to say here, explicitly, that the theoretical discussions so far given could or should have any other object than to render possible the elucidation of this perplexing question, and that a definite conclusion can only be reached by observations and experience—in a word, through actual facts. We are, then, directly, through theoretical reasoning, placed in the advantageous position to turn to account in practice two positive and exact questions, the affirmation or negation of which must settle in a definite manner the theory of heredity. These questions are simply the following:

Can a non-syphilitic mother give birth to a syphilitic child?

Can syphilis, acquired by the mother during the period of pregnancy, be transmitted to a fœtus non-syphilitic at the time of conception?

I propose now, from my own personal experience, and the impartial udgment of other investigations, to discuss fully, and finally to answer

these two questions. It will not be amiss, however, first to say a few words upon the method of my observations.

By far the most important portion of my material for study was presented in the ambulatorium of the first public hospital for children, in which there were annually about four thousand sick children, the number of new cases of hereditary syphilis being thirty to forty yearly. The policlinical method of observation, a materially deficient one in most other diseases, and of less value than the clinical, offers, especially for our purpose, important advantages. The method of study does not confine itself alone to the diseased individual, but includes, also, in the course of time (together with the necessary care and patience), both parents, as well as the brothers and sisters, in ascending and descending line. When I first designed the plan of this work, about four years ago, I took from the records of the last few years, commencing from 1867, the names of all children with a diagnosis of hereditary syphilis, and placed them in an alphabetical register; by which means the individual names became easy of recollection to me. Since then, I have recorded all new cases bearing any relation to this subject in the most precise and complete manner, and followed them up through the agency of the register. I was thus frequently placed in a position to recognize children treated many years previously, as well as their brothers and sisters, both older and younger, and to modify, confirm, and complete their previous histories. I also succeeded in many cases by patiently waiting, by gradually becoming confidentially acquainted with all the family affairs, and retaining the continually increasing confidence of the parents, combined necessarily with a many years' objective observation of the single members of the family, in bringing to light the private details, origin, and heredity of the disease, which, even by repeated questioning and urging, remain for the most part entirely unobtainable. In this manner, I became possessed of the histories of one hundred and nineteen syphilitic families, with a complete record of all births, and, even if all doubtful points are not removed from a certain number, I succeeded, nevertheless, in obtaining, in the majority of the cases, everything necessary to render them precise.

In order to complete and control my work still further, I have undertaken within the last few years to render serviceable to my purpose, if even in a limited way, the invaluable material which may be studied in reference to our subject in both syphilitic divisions of the general hospital, in the three departments of the lying-in institute, and in the orphan asylum. This undertaking, owing to certain peculiar surroundings, is one of much difficulty.

The connection between these various institutions is a very slight one, and it is, notwithstanding the complaisance of the attending physicians, only possible, after a great amount of patience, trouble, and time, to follow a case through all these phases. In spite of all this, I was successful with a sufficient number of cases, and these same investigations were a most important addition to my material.

Among the innumerable cases described by the various authors which I have read in relation to this subject, I have only appropriated those which are given throughout objectively and clearly; while those reports in which the biased opinions of the writer are adhered to I have made use of only with the greatest caution, or have paid no attention to whatever.

(To be continued.)

EDITORIAL.

THE ROCKY MOUNTAIN MEDICAL REVIEW was established in Colorado Springs in September, 1880, by Dr. A. Wellington Adams, whose talent and energy caused it to be recognized, both at home and abroad, as a journal of more than ordinary merit.

It has received the endorsement of physicians and scientists of the highest standing in America and England, and it is to be regretted that a journal so successfully started on a prosperous career should, by the removal of Dr. Adams from Colorado, be obliged to part with him and its individuality at the same time. Dr. Adams is now engaged at Chicago in purely scientific work of great importance, which demands his entire attention.

His removal together with the retirement of Dr. J. H. Kimball, whose engagement terminated with the completion of the first volume, resulted in transferring the review and its interests to the present management, who have decided to issue in its stead the "ROCKY MOUNTAIN MEDICAL TIMES," which will be a journal of more ample proportions with an able staff of contributors.

TO OUR subscribers and all others interested in the ROCKY MOUNTAIN MEDICAL TIMES we desire to say that our failure to follow in every particular the plan laid down in our prospectus is due to the delay in

preparation of some of the original articles. A valuable paper on "Placenta Prævia," intended for this issue, was not handed in in time and will therefore have to lay over for a future number.

WITH the current issue of the ROCKY MOUNTAIN MEDICAL TIMES, we begin the publication of Prof. M. Kassowitz' scientific investigations regarding "The Heredity (transmission) of Syphilis." This most important and recent little work of M. Kassowitz has been very excellently translated by Dr. M. A. Wilson, of Denver. We also begin in this same issue the publication of a series of lectures on the diseases of the genito-urinary organs, delivered by Prof. W. R. Whitehead M. D., at the Medical Department of the University of Denver, revised by the author for the MEDICAL TIMES.

DENVER AS A MEDICAL CENTER.

THAT Denver should foster and cherish an ambition to found and eternize a first-class medical college is but natural, for this great western country constitutes in reality, a country, a people, rapidly increasing in wealth, population, and where aesthetic culture is the one dominant idea of her ever progressive and enterprising citizens.

That Denver, the commercial and resident city of the marvellous centennial state, with all her beauty and picturesqueness, situated at the transverse processes of the back-bone of the American continent, should become the medical center of the "Great West" is not strange.

The Medical Department of the University of Denver, having erected an elegant building, and secured, with perhaps two or three exceptions, a very able faculty, was duly opened November 1st, for the reception of medical students. Addresses were delivered by Ex-Gov. John Evans, Rev. Dean Hart, Rev. David H. Moore D. D. Dr. H. K. Steele, Dean of the faculty and Professor of surgery delivered an unusually interesting and instructive lecture.

Believing that the Trustees and Faculty of this institution will ever bear in mind the importance of a higher standard of medical education, and that they will strive to so promote; we would urge upon all those interested in the development of the true science of medicine and the correct methods of medical instruction to lend their support and encouragement.

CORRESPONDENCE.

Portsmouth, England, September 3, 1881.

EDITOR ROCKY MOUNTAIN MEDICAL TIMES:

DEAR SIR:—There have been gay doings over here of late amongst the members of the profession. First, we had an International Medical Congress in London, and afterwards the annual meeting of the members of the British Medical Association at Ryde, that most beautiful of summer resorts in the Isle of Wight. I was glad to see trans-Atlantic surgery so ably represented, and to behold so many illustrious surgeons whose names have long been familiar to Europe.

A good deal of indignation has been engendered by suggestions in the opening addresses of Dr. Bristowe and Mr. Jonathan Hutchinson in medicine and surgery, that the line which keeps the homeopathist and the regular practioner apart, might be, without any loss in dignity, relaxed in favor of Hahnemann's disciples of reputability; but Professor Stokes, of Dublin, objected, and was loudly and unanimously applauded when he emphatically denied that the regular practitioner should, could or ought to consult with homeopaths, and expressed himself grateful to surgery for its affording no *locus standi* to the homeopath predicting that surgery would yet prove the salvation of medicine. The much vexed question of vivisection was ably handled by Professor Humphries, of Cambridge. The abolitionists muster strongly here, as I notice they do in New York, but amongst tne vast numbers of practitioners, professors, teachers, etc., assembled at Ryde, there was only one solitary abolitionist.

The section of sanitary medicine was well attended, indeed there is perhaps more activity in this department than in any other.

Some observations have recently been made in regard to a fatal, insidious disease which attacks wool-sorters and mohair workers. It is of an anthracoid character, unamenable to treatment, and very rapid in its course. It is attributed to the formation of a peculiar bacillus in the system, whose germ was contained in the wool or hair. This has been styled bacillus anthracis, lately, however, the posibility of differentiating this bacillus has been doubted, and bacteria have been found in the blood and tissues of human beings and animals dead from various causes, and even in animals killed for the purpose of ascertaiuing the fact, and that so immediately after death as to lead to the strongest probability of their having existed in the tissues during life; so the point remains to be determined whether the bacillus anthracis exists as a distinct variety and can be differentiated from other bacteria.

Phænological reports might afford useful information to the farmers; were they carefully prepared and freely distributed. A report of this nature, communicated to the meteorological society for last year, drew attention to the multitudes of slugs that attacked everything green, had farmers been aware of the connection between these and sheep-rot, and taken means to destroy them, how much preventible loss would be avoided. As it is not generally known the part that slugs play in the spread of sheep rot, I may give a slight sketch of the "Fluke." The distoma hepaticum, or fully matured fluke, contains and lays many thousands of eggs, each of which, under favorable circumstances, gives vent to a ciliated, spherical embryo, which can move about and swim and so attach itself to a mollusc, a snail or slug, or aquatic insect, and gain access to its interior. This effected, the ciliæ, no longer wanted, drop off, and the embryo enenlarges into a cyst, from which a brood of little worms, in process of time, emerge. These are called cercevariæ, they may find their way into sheep or other quadrupeds whilst yet in their hosts, the slugs, or after emerging from them by drinking water. Either in the molluscs or quadrupeds they pass into the liver ducts. Sheep are especially subject to fluke because they are close feeders and crop the grass close to the ground where the pupa or mollusc abound. Poultry have a strong predilection for slugs and snails, and the danger in permitting them to gratify their taste by turning them into meadows etc., is obvious.

Very recently a case occurred at Corfe Castle, where a fluke found its way into the hepatic duct of a labourer and caused his death. A case has lately happened at Leeds which points to the fungoid origin of diphtheria. The drains and drinking water were beyond suspicion, but the walls and shelves of the breakfast room on the ground floor became very damp and covered with a peculiar fungus resembling red sand.

J. MULVANY, M. D.

VALVULA BAUHINI.

DEAR EDITOR:—The following sketch of anatomical bibliography may prove interesting to your numerous readers if you have space to insert it in your valuable Journal. I find it in *Le Progres Medical* as a literal translation from the works of the renowned Gaspar Bauhin, author of the discovery of the *Valvula Bauhini*, or ileo-cœcal valve. "*Valvula in Intestini Coli anno 1579 a me Reperta.*" I translate:

While studying in Paris and following the prescribed course of anatomy under the celebrated Professor of Anatomy, Thomas Coccius, in 1579, in one of my dissections, I was studying with greater care than

usual the structure of the intestine; after having completely freed it from its mesentery, I began to wash it in order to see more satisfactorily its fibres and tunics, and poured water in turn both through the jejunum and the rectal extremity. I observed then, that the water introduced through the jejunum ran down quite rapidly, while that introduced through the rectum could not pass through the colon, even though pressure was used. I then began to look both for the place and cause of the obstacle; I found it in the colon, where the ileum with its appendix vermiformis joins the cœcum, that is the origin of the colon, a remarkable valve, thick and membranous; it being a new thing and never having been written about anywhere, (quod tanquam novum a nemine hactenus literis traditum). I showed it to several persons, and especially to my excellent master, Guillaume Capellus, the illustrious professor of medicine.

To this date, I have made mention of it in all the public dissections of our university, which have been under my supervision for the last eight years; but especially in the two dissections which I have made in 1586. I have repeated before a large assembly, the experiment of pouring water in the superior and inferior ends of the intestines. I have even made them touch it (eandem etiam Palpandam exhibui). The intestines, which, by actual measurement, were of 24 arms-length, were finally inflated, and we could not discover that a particle of air could escape through the valve (ne quidem flatum vulvulam hanc pertransire observatum est).

But, as I did not know whether similar valves were to be found in the intestines of animals, the 18th of July of that year (1588) I dissected a dog and the abdominal organs of other animals for the medical students, and showed them what I had already published on the anatomy and also on the method of dissection. It was then that we made a special study of the valve, in the intestine of the dog (eam etiam valvulam in canis sectione inquirere visum fuit).

Among the great number of experts and learned personages who assisted me in that dissection, was Antoine Boucard, of Lorraine, a distinguished botanist, wishing to test these investigations, prepared the intestines of a dog and filled them successively by the superior and inferior ends. I then showed the valve, which was like a ring and different from that in man (quæ tamen non valvulæ humanæ, sed circulo similis erat). If I have been somewhat proud in the discovery of this valve, or of my method of research, it is certainly not to boast of being its author, but rather that the reader may know where it has been discovered and how to look for it, seeing, that even now there are illustrious men who deny its existence because they cannot find it. I believe that its function is to oppose the return of fæces passed from the large into the small intestine (ne excrementa ex tenuibus intestinis ad crassa delata regurgitare possint).

It is not true, although many have opposed me, that diseases of the iliac fossa prove the contrary, as this valve does not completely shut off fæcal matter. But what do theories amount to when the autopsy overturns the objection. That there may be disease of the iliac, we admit; and, furthermore, that the disease appears with such violence that not only may the valve yield, but may be ruptured and the fæces come up even through the pylorus into the stomach.

A. LABRIE, M. D.

OBITUARY.

DEATH OF BOUILLAUD.—*La France Medicale* conveys to us news of the death of this eminent physician. Jean Bouillaud was born Sept. 14, 1796, and died at Paris, Oct. 29, 1881. It will be remembered that he was President of the Grand International Scientific Congress of 1867, held at Paris. At that time, even, he was an honored representative of the past; but to the medical generation of the present day, just budding into existence, the name of Bouillaud is almost unknown.

Yet, what interesting associations cluster around the name of this great pathologist in connection with the history of endocarditis, of pericarditis and of articular rheumatism. He occupied the highest positions in France, to which medical men aspire. His pupils were numerous and are widely dispersed. He was a conspicuous and brilliant light amidst a galaxy of medical celebrities; of wonderful singleness of purpose, and deeply impressed with the value of biological studies in their application to medical science. Bouillaud accomplished for medical pathology, what an exact and rigorous method of thought has produced in France for other departments of science. A zealous desire for the accurate determination of facts, coupled with the spirit of experimental research, which appeared in France, in the latter part of the last century, and which produced eminent scientists of world-wide reputation, in almost every branch of human knowledge, gave to the intellectual development of France, a durable pre-eminence that temporary misfortunes will not efface.

The researches of Bichat, Laennec, Brouissais and others marked the activity of scientific investigation in the medical sciences, in the first quarter of the present century; during its second quarter appears Bouillaud, the contemporary of Gerdy, Trousseaux, Bouvier, Berard, Louis, Gendrin, Rostan, Piorry, Velpeau, Nelaton and others. Bouillaud after

a long and useful career assiduously devoted to medical science, has passed away, but will live in the memory of those who esteemed him, as an earnest and faithful worker in science, as a man of inflexible honor, and who, under a seeming austerity of manner, possessed a heart that throbbed with the most generous and kindest impulses. Bouillaud was the President of the Examining Board, before which, in August, 1860, the writer sustained his thesis for the Doctorate.

He recalls with pleasure the kindly influence of his presence, as a reverent, sincere and dutiful tribute of respect from a former pupil, he has traced these few feeble lines as an offering of his devotion to the memory of a great and good man. W. R. W.

Dr. CHARLES J. SKINNER died in this city, Oct. 14th, 1881, aged 48. Although he had resided but little over one year in Denver, he had made many friends and was beloved by all who knew him, and was honored and esteemed by all in his profession.

At a meeting of the DENVER MEDICAL ASSOCIATION, Dr. Graham in the chair, the following resolutions were adopted:

Denver, Oct. 15.—An honored member of our society has been removed from us by death, after a long and painful illness, which has closed a life devoted to the alleviation of the sufferings of his fellow men. As a physician, we have learned to esteem and respect our associate, Dr. C. J. Skinner, for his skill and devotion to his profession. As a man, we have learned to prize him for his honor and integrity. In his death we feel that the medical profession of our city has lost a valued member, society, a useful citizen, and his family, a kind husband and indulgent father. We extend our heartfelt sympathies to the bereaved family and friends, and trust that the recollection of a correct and well-spent life which has just closed, may in some measure, lighten the affliction. We therefore, as a society, direct that the Secretary be instructed to enter these proceedings upon the minutes of the Denver Medical Association, and that a blank page be left upon the records, upon which the name of the deceased, with date of birth and death be suitably inscribed

And we further direct, that, the Secretary shall cause these proceedings to be published in the daily papers of this city, and that a copy of the same be sent to the family of deceased.

Signed, THOS. A. HAWKINS, *Chairman*,
A. STEDMAN,
J. H. KIMBALL.

BOOK NOTICES.

The Prescriber's Memoranda. New York: Wm. Wood & Co., 1881.

A convenient collection of formulæ, which can be easily carried about in the pocket of the practitioner, though we presume very few will do so. It is one of those little books which one is very glad to refer to in the office (after the patient is gone). We presume that such books will continue to be issued, one varying but little from the other; and we will try to think that they are needed.

Indigestion, Biliousness and Gout in its Protean Aspects. By J. Milner Fothergill, M. D. New York: Wm. Wood & Co., 1881.

If physicians can spare a little time from their study of the localization of the functions of the brain, nerve-stretching and carbolized spray, it would be well for them to vary the monotony by reading this well written work. Its author is well known and he has treated of matters which have of late years received but little attention from writers. The common affections like those referred to in this book are apt to be treated by the great majority of medical men, on a routine plan, aud many fail to realize the fact that progress can still be made in the study of common, every day diseases, as well as in those more obscure. We commend the book to our readers.

A Manual of Histology. Edited and prepared by Thos. E. Satterthwaite, M. D. Illustrated. New York: Wm. Wood & Co., 1881.

We doubt if the enterprising firm of Wm. Wood & Co., have for some time issued a book of more real merit than the above, and we congratulate them on the general appearance of the work. Prepared by Dr. Satterthwaite it evidences careful work, in a field, which few of our busy American medical men have explored. We gladly recommend the book both to teachers and students as being fully adapted to their needs.

The Applied Anatomy of the Nervous System. By Ambrose L. Ranney, A. M., M. D. Illustrated. New York: D. Appleton & Co., 1881.

As a text-book and a work of reference, the book before us is one of genuine merit, combining in its detail, the anatomy and physiology of the nervous system, with the results of all recent investigations. It is profusely illustrated and the plates are exceptionally fine.

The Wilderness Cure. By Marc Cook. New York: Wm. Wood & Co., 1881.

This book of 150 pages, relates to the writer's search for health in the Adirondack regions. It is written by one of those enthusiasts who find perfection at some one of the many health resorts, and cannot resist the temptation to sound its praises. The author has inserted the paper written by Dr. A. L. Loomis, which first appeared in the *N. Y. Medical Record*, and, as he states, "that paper must stand as the excuse for this book."

When physicians and the general public understand that no one health resort is to be recommended for all cases of phthisis, and when advice is given applying to each particular case, we may begin to understand the advantage to be gained by visiting a certain locality. Thus far the study of climate-cure has not received proper attention from physicians, and they are apt to blindly follow any one who claims to be an authority.

The picture of the poor invalid shivering over a "roaring" fire on the fourth of July, is not pleasant to contemplate, and leads us to infer that he encountered one of those "unusual spells" of weather, which are so often met with by the traveller in quest of health. One truth laid down in the book, commends itself to the understanding of all familiar with these resorts, and that is, that as long as the invalid continues to improve, there he should remain summer and winter. The book is written in a pleasing manner, and on the whole, will repay perusal; but we presume, that its pages would carry more conviction with them were it not for the fact—so we are informed—that the author since writing the book has died of consumption.

The Students' Manual of Venereal Diseases. Being a concise description of those affections and their treatment. By Berkely Hill, Prof. of Clin. Surgery in Univ. Coll. London, Surgeon to Univ. Coll. and to the Lock Hospitals, and by Arthur Cooper, late House Surgeon to the Lock Hospital.

This valuable little work, now in its second edition, and published by Wm. Wood & Co., in cheap form, so that it is within the reach of every student of medicine, is deserving of the highest praise. Its issue marks another new departure in medical publication, for which this house has become famous. The publishers are to be congratulated, especially when considering the price, ten cents, on the typographical appearance of this manual.

Suppression of Urine. Clinical descriptions and analysis of symptoms. By E. P. Fowler M. D. Ninety-three clinical cases, with illustra-

trations, tables, and diagrams. New York: Wm. Wood & Co., 1881.

One interested specially in this subject, might, by a careful study of this little volume, obtain some interesting and valuable information.

Lectures on Electricity (Dynamic and Franklinic) in its relation to Medicine and Surgery. Prof. A. D. Rockwell, A. M., M. D. New York: Wm. Wood & Co., 1881

This brochure consists of a series of lectures, eight in all, originally published in consecutive numbers of the *Virginia Medical Monthly*. The author endeavors to present in brief language, the applications of electricity to medicine and surgery, and the principal apparatus employed therein. He has added a new lecture, in this the second edition, on Franklinic electricity, and alludes to the *induction balance* and *galvanic accumulator*, recent additions to electro-therapeutics.

The Nurse and Mother. A manual for the guidance of monthly nurses and mothers; comprising instructions in regard to pregnancy and preparation for child-birth; with minute directions as to care during confinement, and for the managing and feeding of infants. By Walter Coles, M. D., Consulting Physician to St. Ann's Lying-in Asylum, St. Louis. Member of the St. Louis Obstetrical and Gynecological Society, &c. St. Louis: J. H. Chambers & Co., 1881.

The only possible objection that can be made to this book is, that it is written in a popular style, intended for the general public. Whether this class of medical literature should be encouraged by the profession is a question; but inasmuch as the author has attempted to "replace many injurious popular superstitions and traditions by the teachings of enlightened common sense and the results of scientific study and experience." places him beyond the pale of criticism on that score. The work is written in a very concise and practical manner and is well worthy of a careful perusal, especially by students and young practitioners, who will find many *points* in the chapters on infant feeding.

Antiseptic Surgery. The Principles, Modes of Application, and Results of the Lister Dressing. By Dr. J. Lucas-Championniere, Surgeon to the Tenon Hospital, etc., etc. Translated from the second and completely revised edition, by Frederic Henry Gerrish, A. M., M. D., Surgeon to the Maine General Hospital, etc. Portland: Loring, Short & Harmon, 1881.

This, the only American work on Antiseptic Surgery, we heartily recommend to all practitioners desiring a full exposition of the details of Listerism as applied in all operations in Surgery. The author states in

his preface: "Although for more than a decade it has been hardly possible to glance through a medical journal without seeing something concerning the Lister method, there are comparatively few medical men in this country who have a sufficiently good knowledge of this modern system of treating wounds to enable them to apply it with essential accuracy. The result is that it is either not used at all by most surgeons, or else is incorrectly employed with disapointing results, which are not fairly attributed to the method. This condition of affairs is probably due to the fact that there has been no low-priced treatise on the subject in the English language, from which one could acquire the necessary information with regard to the principles, practice, and results of Antiseptic Surgery."

Transactions of the Medical Association of Missouri. At its twenty-fourth Annual Session, held at Mexico, Mo., May 17, 18 and 19, 1881. St. Louis: J. H. Chambers & Co.

How to use the Bromides. By George M. Beard, A. M., M. D. Reprint from the *Journal of Mental and Nervous Diseases*, July 1, 1881.

Electricity in Medicine and Surgery. With cases to illustrate. By John J. Caldwell, M. D. Baltimore, Md.

The Treatment of the Genito-Urinary Organs, the Use of Electricity, Damiana, &c. By John J. Caldwell, M. D. Reprint from *St. Louis Med. and Surg. Journal.*

Observations on the Origin, Character and Treatment of Oinomania. By T. L. Wright, M. D., Bellefontaine, O. Reprint from *Alienist and Neurologist*, St. Louis, Oct., 1881.

Transactions of the Colorado State Medical Society. Tenth Annual Convention, Denver, June, 1880; Eleventh Annual Convention, Leadville, September, 1881.

PROGRESS IN MEDICINE AND SURGERY.

EDWARD WOAKES M. D. (*London Lancet*), having found that members of the group of metalloids, including iodine and bromine, exerted a curative influence on bronchocele, draws the inference that the fluorine compounds would be of value. Hydrofluoric acid was selected as the nearest attainable approach to the element fluorine. A pure acid of fairly constant strength was obtained by redistilling the commercial acid; it then contained about thirty per-cent of the gaseous acid. By diluting this acid with about 200 per-cent of water, a solution is obtained capable

of being tolerated by the stomach, and also of being dispensed in glass vessels In commencing its administration great caution should be exercised. Fifteen minims of the ½ per-cent solution in an ounce of water, increased gradually to two drachms, which appears to be the limit of toleration. Even smaller doses occasionally produce slight headache and nausea, for which reasons temporary suspension of the remedy may be required. Of twenty cases treated, the author reports seventeen recoveries and three failures. It is a matter of observation, that when fluoric acid is adapted to a given case, its effect upon it is often immediate and rapid. In some cases improvement goes on up to a certain point only, the peripheral portions disappearing but the center remaining firm and large. In these cases Luke's plan of injecting the substance of the tumour with tr. iodine was employed as an adjunct. The evidence points to the fact that when fluoric acid is administered internally, but is insufficient in itself to effect a cure, the number of injections necessary is materially diminished. On the other hand, the acid alone has proved efficacious in some of the cases, after injections and other methods had failed. The author's theory of the action is, that it restores the lost contractile function to the impoverished ganglia of the sympathetic; either by acting as a physiological spur to their function, or by furnishing a deficient element in their composition.

THE TREATMENT OF CLUB-FOOT WITH APPARATUS —Dr. James S. Green, of New York, contributes to the November number of the "*New York Medical Journal and Obstetrical Review*" an article in which he argues that a great majority of the most intractable forms of club-foot may be treated successfully without the use of the knife. To effect the purpose of safe, comfortable, and certain reduction of chronic club-foot by mechanical means, he remarks, the instruments must perform the following functions: 1. It must effect by extension *the separation* of the articular surfaces of the bones involved exactly in the position in which they are presented by the deformity. The extension should be so complete that the synovial surfaces of the tarsal bones will slide *over* and *not upon* each other when the foot is twisted into its normal position. (This condition being obtained of itself reduces to a minimum the amount of force necessary to be exerted in moving the bones, which are thereby not jammed against each other, the synovial membrane and the cartilages injured, and ulceration of the soft parts made imminent.) 2. It should produce *the gradual* reduction of the foot to a normal position by continuous stretching, acting exactly in an opposite direction to the lines of the deformity.

In talipes equino-varus (the most common form) it should flex the foot, thereby overcoming the contraction of the gastrocnemius and soleus

muscles, while at the same time it should abduct the foot, reducing the rigidity of the tibialis anticus and tibialis posticus muscles. It should stretch the plantar fascia, after overcoming the tendo Achillis and during the reduction of the tibial muscles. Withal, the instrument should be light in weight, portable, and easily worn, so that the patient may assist the cure by walking upon the foot which is being gradually extended and drawn toward its normal position. It should be so constructed that, as the opposing tissues yield to the applied forces, the advantage gained, be it ever so little, can be easily siezed and retained. The "compound club-foot twister," an instrument employed by the author and his associate, Dr. C. F. Stillman, is described as being so constructed as to twist the anterior portion of the foot on the posterior at the medio-tarsal joint, and also to gradually and painlessly alter the angle of the foot with the leg at the ankle joint. It consists of a local extender, provided with a slotted arc for graduated movement, placed each side of the ankle joint, and another placed in front of the arch of the foot. Below, these are attached to a flexible felt or leather sole, on which the foot is firmly fastened by bandages; and above they are connected to metal terminal plates, which are bound down to the leg by some immobile dressing. This splint allows the foot to be twisted back into shape without pain, as it provides a local extension which relieves the parts from strain and attrition during the twisting, and also allows the patient to walk without interfering with the action of the instrument, the foot being completely under the control of the surgeon. The instrument and dressing used in a case related weighed thirteen ounces.

RAPID LITHOTRITY.—In the proceedings of the recent International Medical Congress that related to "rapid lithotrity" Sir Henry Thompson reported that he had performed the operation ninety times.

He urged the importance of limiting the uses of large instruments, whether for removing or crushing the *debris*, to calculi of large size, undue distension of the urethra greatly increasing the risk. Dr. Bigelow spoke of the importance of preventing the return of fragments to the bladder after they had once been removed, and described a valvular contrivance, attached to the evacuator, designed to prevent this. Mr. Coulson referred to the danger of the lithotrite breaking in the bladder. This had occurred in two of his cases. He thought the instruments were susceptible of inprovement. Sometimes he had experienced difficulty in the reintroduction of the evacuator, owing to accumulation of sand in the prostatic portion of the urethra. Usually this difficulty could be overcome by throwing a little water into this part of the urethra, but in two cases he was unable to introduce the evacuator and the patient died

M. Reliquet, of Paris, described the lithotrite which he had used for ten years. It was powerful enough for large stones, and not liable to clog. It was designed to be used with a hammer. He considered that the succession of small shocks resulted in a more complete fragmentation of the stone than was obtained by the ordinary method, Mr. Berkely Hill expressed the opinion that there were many cases, for example, those of middle-aged men, in whom the deeper portion of the urethra was very sensitive, in which the milder, repeated sittings of Civiale were better borne than the rapid operation of Bigelow.—*N. Y. Med. Jour. and Obstet. Review.*

TETANUS FOLLOWING THE ENUCLEATION OF AN EYE.—The left bulbus oculi of a woman aged seventy-one was removed on account of an intra-ocular tumour, which sprouted from the corneal wound following an iridectomy for suspected glaucoma. Copious hæmorrhage at the time of, and following, the operation was checked by a compress moistened with liq. ferri placed over a sponge inserted in the orbit. Fourteen days afterward the first symptoms of trismus and tetanus appeared, which carried off the patient in eight days. —*Archiv fur Augenheil Kunde.*

THE FOCAL LINES IN ASTIGMATISM.—In the *New York Medical Journal and Obstetrical Review* for November, 1881, Dr. Willliam C. Ayres, of New York, endeavors to account for the normal astigmatism of the eye. The reason may be found, he suggests, in the fact that we have more occasion to inspect vertical than horizontal lines, owing to their predominance in our surroundings. As to the actual cause of the greater curvature of the vertical meridian of the cornea, he thinks it is due to the method of development of the eye during embryonic life, especially that of the lids. We know that in the beginning there are no lids, and that the cornea is formed of a soft embryonic tissue, which must be very pliable from the manner in which it is made to take up its position in front of the lens after it has receded from the ectoderma and entered the cavity of the secondary ocular vesicle. Just after this the lids appear as a small circular ridge entirely behind the cornea, and grow directly outward. Then a tract of epithelium called the lid suture makes its appearance, which forms from the lid-margins and directs the growth of the lids or pulls them down to the surface of the cornea. This growth takes place principally from above and below, and the substance for the lids, being pulled very close to the cornea, presses upon it and bulges the corneal tissue in such a manner that the curvature must become greater in the vertical than in the horizontal direction. In sections through embryonic eyes he has noticed that distortion, sometimes so great that there was a considerable change of curvature in the part covered by the advan-

cing lids from that which had not yet been reached by them, even recognizable with the microscope. This method of development is fully adequate, he thinks, to account for the particular change in the corneal curvature. In those cases where the resultant difference has not remained too great we call the eye emmetropic, but where the pressure has been excessive it may have produced abnormal astigmatism. Of course other kinds of astigmatism than that usually found according to this method of viewing the matter would have to be accounted for by some anomaly in the progress of development, but we find such anomalies frequent enough in the condition of young lids. This theory, the author remarks, we must take only for what it is worth, but he holds that it is sufficient to account for the constant astigmatism found in all eyes, including those pathologically astigmatic. Referring then to Knapp's mathematical demonstration of the reason why the foci of the vertical and horizontal meridians are lines (in the former a horizontal, and in the latter a vertical line), he remarks that to the ordinary mind a mathematical demonstration requires to be supplemented by something more striking, and such he proceeds to furnish in the shape of experiments with a driaxial ellipsoid imagined to be cut in turn by varioun systems of planes.

NÆVUS.—ETHYLATE OF SODIUM.—The result of my experimental inquiry is to indicate that in the ethylates of sodium or potassium we have a substance which, brought into contact with colloidal tissue, would be decomposed into an active caustic in the nascent state, and into alcohol which, in the same state and at the time, becomes an antiseptic, a styptic, and a pectiniser, or producer of coagulation.

The facts ultimately led me to think of applying the ethylate to living tissues as a method for removing vascular growths.

I learned that when an ethylate was applied to a vascular growth the metal, sodium or potassium, would be oxidized and become a powerful caustic, while at the same time the alcohol that was reformed would fix the destroyed matter and the blood by the process of coagulation, and would at the same time prevent decomposition.

In a case of nævus of the scalp in a child, the treatment commenced in the usual way by the application of the ethylate over the growth by means of a glass rod.

The nævus was small, not larger than a fair-sized hazel-nut. The first application caused a dense scale to form, which was loose and removable on the fifth day. The ethylate was then reapplied, and five days later, when the new scale was removed, the nævus was reduced to the size of a small bean. It remained in this state during three further applications of the ethylate, being much longer under treatment than I

had expected after the second application. On the seventh application it was nearly removed, and one additional touch a fortnight later completely removed it.

No constitutional symptoms interfered with the course of the treatment, and no scar remained. With patient care in its employment, sodium ethylate may be accepted as the most effective remedy for the ordinary form of nævus.—DR. B. W. RICHARDSON,—*Braithwaite's Retrospect.*

A POSSIBLE PREVENTIVE OF RABIES.—In the *New York Medical Journal and Obstetrical Review* for November, 1881, Dr. L. L. Dorr, of San Francisco, discusses the etiology of hydrophobia, with special reference to climatic influence. The Pacific coast of America, he remarks, presents some peculiar features as regards this disease; from Behring's Straight to Cape Horn, he states, not a well-authenticated case of rabies was ever known, In support of this statement he adduces testimony to which great weight must be allowed. He therefore dissents from the common opinion that climate has no influence over the disease. A test of the power of the climate of the American Pacific coast to prevent the development of rabies can easily be made, he suggests, with strong probability of proving a blessing to hundreds of human beings who have no other hope. The period of incubation is so long in many cases that several dogs that were badly bitten by a dog known to be suffering with rabies could be sent there under guard and kept behind prison bars and under observation until the extreme limit was passed. Or a more practicable plan might be to have a number of the many persons who are annually bitten by rabid dogs in the Eastern States and Europe go to that coast, and remain there until the extreme limit of the possibilities was passed, selecting any place from Cape Horn to Behring's Straight—preferably, however, California, where they have a varied climate and all kinds of dogs, and are in close communication with all parts of the world. The patient having a knowledge of these facts, and the support of hope of escape, it might be a power to prevent an attack; and, if he were attacked, the disease might be so modified by the climate as to render it susceptible of cure.

DR. J. MILNER FOTHERGILL ON USE OF MALTINE.—In order to aid the defective action upon starch by the natural diastase being deficient in quantity or impaired in power, we add the artificial diastase "maltine." But, as Dr. Roberts points out, in order to make this ferment operative it must not be taken after a meal is over. Rather it should be added to the various forms of milk porridge or puddings before they are taken into the mouth. About this there exists no difficulty. Maltine is a molasses-

like matter and mixes readily with the milk, gruel, etc., without interfering either with its attractiveness in appearance, or its toothsomeness; indeed its sweet taste renders the gruel, etc., more palatable. A minute or two before the milky mess is placed before the child, or invalid, the maltine should be added. If a certain portion of baked flour, no matter in what concrete form, were added to plain milk, and some maltine mixed with it, before it is placed on the nursery table, we should hear much less of infantile indigestion and mal-nutrition.—*London Practitioner.*

NEW METHOD OF COMPULSORY ALIMENTATION.—When insane patients refuse to take food, Keppelmayer advises the following: the patient being placed on a perfectly horizontal couch, without a pillow, one nurse holds the head, another the outstretched arms, and a third the legs. A soft-rubber Jacques' catheter, No. 10, with a large lateral opening near the lip, is well oiled, introduced through one nostril, and slowly and gently pushed onward as far as the pharynx. Here it usually meets with an obstruction. Without using any force, very gentle pressure is now exerted until an act of deglutition is excited, by which the catheter is propelled into the stomach. These catheters are of such a length that, when the tip has entered the cardiac orifice, the end hangs from four to six centimetres (about one to three inches) outside of the nostrils. A hard rubber canula having now been fixed in the projecting extremity, a syringe with a capacity of about half a litre (one pint), and filled with fluid food, is fastened to the canula and the contents slowly injected into the stomach, after which the apparatus is withdrawn. Should the manipulator lose patience when the catheter is obstructed at the entrance of the pharynx, and use undue force, the tip of the instrument is liable to deviate from the proper course, and suddenly make its appearance between the teeth.

This manœuvre once acquired by a patient, subsequent attempts at catheterization will require particular patience and care, in order to succeed. The chief recommendations of this method of forced alimentation are its simplicity and the impossibility of causing an injury during its execution. Keppelmayer also recommends the employment of large-sized soft-rubber catheters, provided with a large, smooth opening at the tip, for administering enemata.—*Med.-Chirurg. Rundschau*, August, 1881.—*N. Y. Med. Record.*

TYPHOID FEVER CONSIDERED AS FECAL INTOXICATION.—Dr. Jules Guerin (*American Jour. Med. Sciences*, Oct. 8), says: For a long time the deposits of human excrement were considered to be susceptible to contribute to the development of typhoid fever. This opinion, expressed with a certain character of generality, and besides, deprived of any ser-

ious demonstration, had remained in conflict with all opinions of the same kind. Up to what point was it founded? In what measure, under what form, in what conditions, could the fecal excretions have a share in producing typhoid fever? In order to elucidate, if not to solve, these various questions, the author of this work has given himself up to experiments on animals and to clinical researches, which have led him to the following conclusions: (1) The specific diarrhœic matter of those affected with enteric fever, contains at its exit from the body tonic elements resulting from the fermentation of fecal matters, retained and accumulated at the end of the small intestine, behind the ileo cœcal-valve. (2) The organic lesions, considered heretofore as specific signs of typhoid fever, congestion, ulceration of the mucous membrane, alterations of the glands of Brunner, Peyer's patches and mesenteric glands, are effects of the virulent and ulcerative action of typhoid matters on these parts; and the functional troubles or the general symptoms of the illness, are, at the same time, the result of the penetration of these same matters into the organism, and of the organic changes which they determine. (3) The complications which present themselves in the course of typhoid fever, under the form of meningitis, pleurisy, pneumonia and other marked affections, are only more distinct localizations of its poisonous principle, just as those illnesses which begin at the onset with typhoid symptoms, are in themselves nothing but primitive effects of fecal poisoning. (4) Typhoid poisoning engendered by fecal fermentations spreads itself incessantly abroad by all the excretory ways of the body, from whence the transmissibility of the illness and the formation of seats of infection, susceptible of reproducing it in an endemic and epidemic form. Every one of these propositions has been the object of experiments, and of clinical, anatomical and pathological observations, stated in three memoirs read before the Academy of Science and Medicine, in Paris, in the years 1877 and 1878, with proofs to the point. The author will reproduce both before the Fourth Section of the International Congress, and will accompany them by observations and new experiments, which have only tended to confirm him in his opinion.—*Detroit Lancet*, December, 1881.

HÆMORRHAGES INTO THE VENTRICLES OF THE BRAIN.—This excellent article on *symptomatology of the primary, immediate, or direct hæmorrhage into the ventricles of the brain* is so full and long that the limits of this abstract do not allow of more than a synopsis of its headings. The premonitory symptoms of such hæmorrhage are not distinctive; they may precede the attack for a variable period, and are by no means always present. The most common is cephalalgia, which may be of any variety. Next comes dizziness or giddiness; shivering or chilliness; drowsiness; heaviness of the head; slight deafness; malaise;

indescribable sensations about the head; sensitiveness of one cheek; nausea; muscular weakness; numbness; cramps; symptoms of passive congestion; these may all be grouped or occur singly, the rule being the latter. At the time of the attack death is speedy, preceded by convulsions, paralysis without loss of consiousness, in some aphasia, paralysis with partial or complete loss of consciousness (one of the most frequent modes of onset), or partial or complete loss of consciousness without paralysis. In the two latter classes death is delayed several days. The symptoms of the disease are; 1. Deranged intellectual action, as confusion of mind, an early symptom; delirium, usually of a quiet, muttering kind; drowsiness, rare; stupor, more frequent; collapse without reaction; unconsciousness, probably due to the nerve cells receiving a blow which temporarily or permanently deprives them of their functional power. 2. Motor disturbances: Contracture, may be trismus alone; contracture of one upper extremity, or of both: trismus and contracture of both upper extremities; contracture of the extremities of one side, or of all the extremities, the latter in the greatest number of cases. Contracture may appear immediately or be delayed; and may be transitory, intermitting, persistent, or interrupted. Though important, it is not characteristic or pathognomonic of this disease. Convulsions, one of the most important and frequent symptoms, are more or less general, in most cases early, of all grades; complete coma usually exists with them, and they may alternate with contractures. Paralysis is frequent, and does not differ from that due to ordinary interstitial encephalic extravasation. 3. disturbances of sensation: Sensibility may remain perfect, even though unconsciousness be complete, or there may be anæsthesia. Reflex action is generally preserved, though weakened. 4. Disturbances of the organs of special sense: sometimes a buzzing in the ears is complained of. The pupils are most often equally contracted, but may both be equally dilated, or one dilated and the other contracted, the degree of either contraction or dilation varying. In some cases there is insensibility to light, or strabismus. Speech may be partly or completely lost. 5. Disturbances of the alimentary canal: Frothing at the mouth is comparatively frequent, and there is no deviation in some cases. In one out of three cases in which the point was noted the tongue deviated on protrusion. Deglutition is generally easy. Nausea and vomiting are quite frequent, usually occurring early, either slight or persistent; may be cerebral in character. Constipation is the rule. 6. Disturbances of circulation: The pulse is not characteristic; usually at first it is slow, full, strong, and regular, afterward rapid and weak, then irregular and intermittent, and finally imperceptible. 7. Disturbances of respiration: Generally there is stertorous breathing, varying in degree; It may be

irregular, rapid, or slow. The temperature may be above or below normal. 9. Urine: There may be retention or involuntary discharge. 10. Surface symptoms: The countenance is usually dull and apathetic; if pale in the early stage, it is a bad omen. It may be red, congested. Coldness of hands or feet, or entire body, often observed, is not a symptom of so bad import as paleness. Sweating may be present. 11. Apparent improvement takes place in many cases, followed by the most aggravated symptoms and death.—*New York Medical Journal and Obstetrical Review.*

LOCOMOTOR ATAXIA.—Dr. Buzzard draws attention to the prominence given by both Romberg and Duchenne to the incoordination of movement often observed in *locomotor ataxia*. Hence the symptom (which is very frequently absent) has come to be regarded as essential. The author accepts Westphal's symptom (the absence of the knee-phenomenon), along with good voluntary power in the anterior muscles of the thigh, as almost positive evidence of the existence of tabes dorsalis when it is associated with any one or more of the recognized symptoms. He relates five cases in which the *crises gastriques* were so strongly marked as to monopolize attention, which would hardly have happened had the symptoms from which Duchenne named the disease been present. In one of these the author found absence of knee-phenomenon, pupils small, contracting in accommodation, but not to light, and lightning pains, along with the gastric crisis; but this latter symptom was so predominant that the case was pronounced by others to be one of cancer of the stomach, notwithstanding the gastric symptoms had existed paroxysmally for fifteen years. In another case correctly diagnosticated as tabes dorsalis there was a history of obstinate vomiting and epigastric pain of at least three month's duration. Many cases of so-called gout in the stomach may probably be examples of the gastric crises of tabes, as well as some supposed to be due to intestinal obstruction. A like prominence of some other symptoms of tabes may equally absorb attention. Pierret's view, that the disease is essentially a chronic inflammation of sensory fibers, is adopted, and it is urged that, just as optic atrophy may be the dominating symptom in some cases, so atrophy of the auditory nerve may be the prominent one in others, and thus many cases of so-called nervous deafness may be examples of tabes dorsalis. In one case stone in the bladder was the first symptom of tabes dorsalis. The bladder trouble may be more than usually pronounced, and lead to retention of urine and accumulation of mucous, in which a phosphatic calculus is formed.—*Lancet.—N. Y. Medical Journal.*

FREQUENCY OF PULSE AND RESPIRATION IN TUBERCULOSIS.—This is an elaborate study of the *frequency of the pulse and respiration in tuberculosis of the lungs.*, Dr. Biach found that the sex and age had no influence upon the frequency of pulse and respiration. The most rapid pulse found in one hundred cases was 174, the slowest 48; the most rapid respiration was 76, the slowest 12. The most frequent maxima of pulse were 120 and 132; the most frequent minima, 84, 96, and 72. The most frequent maxima of respiration found were 48 and 36; the most frequent minima, 20 and 24. In the sub-acute forms of the disease, for the most part, the extreme maxima of the pulse and respiration were reached, while the above-mentioned pulse and respiration minima were found in the more chronic forms. There was a certain relation between temperature and pulse; the higher the one the faster the other, though sometimes the same pulse rate was found with the opposite extremes of temperature, or the lowest temperature accompanied by a faster pulse rate than the highest. Between temperature and respiration there was no certain relationship, and the same held good between the frequency of the pulse and that of the respiration. Ninety-six strokes to the minute was the pulse most frequently found; then came 120, 108, 84, 100, 132, 104, and 112. The higher rates of pulse were found most frequently in the evening, but in some cases the morning gave the fastest pulse. The character of the tubercular affection, whether subacute or chronic, did not influence the pulse rate. Thirty-six respirations to the minute was that most frequently found, then 24, 28, and 32; and the form of the disease did not influence the rate of respiration to any extent. The most rapid respirations were found in the evening. In some cases in which pneumothorax appeared the pulse rate increased. The occurrence of peritonitis, pleuritis, grave alterations in the larynx, etc., increased the rate of respiration, but had no marked effect on the pulse.—*N. Y. Medical Journal.*

PROGRESS IN OBSTETRICAL SCIENCE.

THE USE OF PESSARIES.—At the Thirty-second Annual Meeting of the American Medical Association, held at Richmond, Va., May 3d, 4th, 5th and 6th, 1881. Dr. Paul F. Munde in speaking of pessaries, vaginal and vagino-abdominal, laid down the following rules to be observed in their introduction and supervision: 1. Always be sure of the diagnosis of the nature and degree of the displacement before resorting to a pessary. 2. Always replace the uterus before applying a pessary.

This applies particularly to backward displacements. It is well to replace the uterus repeatedly, every day or twice daily, for several days before introducing a pessary. The replaced organ may be supported by cotton tampons in the interval, if it is desired to distend and toughen the vaginal pouch; or the object of relaxing the abnormally stretched uterine ligaments may have been obtained by the mere repeated replacements. In flexions, chiefly anteflexions, the frequent straightening of the uterus, or conversion into the opposite flexion, with the sound will often prove beneficial before introducing a pessary. 3. Never insert a pessary when there is evidence, by the touch, of acute or recent inflammation of the uterus or its adnexa, or when pressure with the finger on the parametrium (where the pessary is to rest) gives decided pain. 4. When the uterus is not replaceable—that is, when adhesions bind the fundus down—use great caution and discrimination in deciding whether an attempt should be made to elevate the fundus by manual or instrumental means, or whether the elevation should first be tried by the gradual action of a pessary. (This applies only to retro- and latero- versions.) If neither is to be recommended, do not introduce a pessary until local alterative and absorbent measures have effected resolution of the adhesions. 5. Always choose an indestructible instrument, if possible. This does not apply to prolapsus uteri. 6. Always measure and estimate the vagina carefully before choosing a pessary, and be careful to adjust the pessary in every particular (size, curve and width) to the particular case. No two vaginæ are exactly alike. 7. If the vaginal pouch is not sufficiently deep to accommodate a pessary (anterior pouch for forward displacements, posterior pouch for backward displacements), defer the attempt to fit a pessary until the pouch has been deepened by daily tamponing with cotton, or by the upward pressure of a Cutter or Thomas vagino-abdominal supporter. Or the pouch may be gradually deepened by using first a small instrument (slightly curved in backward displacements), and gradually increasing its size (or curve) until the desired size and shape for permanency are reached. 8. Never leave a pessary in the vagina which puts the vaginal walls to the stretch, and which does not permit the passage of a finger between it and the walls of the vagina. This does not apply to prolapsus uteri. 9. A vaginal pessary which projects from the vulva is displaced. 10. A pessary which gives pain must at once be replaced by one which is painless. 11. A well-fitting, properly-chosen pessary should not only give no pain, but should be a direct source of comfort to the patient. 12. Always examine a patient on her feet after introducing a pessary, or, when it is desired, at her return, to ascertain its efficiency in sustaining the uterus during walking and exertion. 13. Always tell the patient that she has a pessary in her vagina, or she may

not return in spite of your directions, and the pessary may remain for years, to her ultimate great discomfort and danger. 14. Always tell the patient to return within a week after the first introduction, in order that the position and working of the pessary may be looked after, and that, if it does not suit, it may be removed and a better one inserted. Tell her that several trials and various instruments may be required before one is found that she can wear permanently. Also let her return for inspection once every four or eight weeks, as the case may require. Tell her that if she fails to do so the pessary may cause ulceration which will require treatment. 15. Tell the patient that she will need to wear a pessary for months, perhaps years, before a recovery can be expected. 16. Never introduce a pessary which the patient can not remove herself. 17. Tell the patient to remove the pessary herself if it gives pain, and show her how to do it. When she has removed it, let her present herself at once for examination. Tell the patient to use vaginal injections daily for cleansing purposes. If she notices profuse discharge, add astringents; if the discharge is sanious or purulent, let her come at once, as the pessary has probably caused abrasion. 19. Tell her, on removing a pessary to test the result, that the permanence of the benefit obtained therefrom can not be determined for several days or weeks. 20. Always direct your patients to relieve all superincumbent pressure on the pessary by a proper support of their skirts; and, if the displacement be anterior, aid the internal supporter by an abdominal (supra-pubic) pad. All pessaries may be introduced in the knee-chest posture, when it is desirable or possible to replace the uterus only in that posture.

ADHERENT PLACENTA.—Dr. John M. Shaller (*Obstetrical Gazette*, November, 1881.) reports a case of adherent placenta. Mrs. H., aged thirty-one years, was the mother of six children and had suffered from severe uterine hæmorrhages coming on at irregular periods which kept her in bed for several days after each attack. When first seen by the author, she was just recovering from a profuse hæmorrhage, large clots and fluid blood were expelled, preceded by pain. A digital examination per vaginam revealed a globular mass, which felt like the placenta protruding from the os into the vagina, firmly adherent to the uterine walls.

The adhesions were broken up and a part of the placenta removed, the portion remaining appeared to be firmly organized and adhered to the uterus; but the bleeding ceased. Ergot was given in drachm doses and rest enjoined. During the following night a large clot was expelled, which clot, on examination, was found to be composed of blood and two pieces of bone belonging to the fœtal head, part of the parietal and frontal. More of the retained placenta was removed at this visit—ergot continued. Two days later the patient became unconscious, fell into a

deep sleep, with sighing respirations from which she could not be aroused. Large doses of quinine and opium were administered. This comatose condition lasted three days, when severe rigors set in and death immediately followed. No post-mortem examination could be obtained.

The case is an interesting one and the following questions are suggested: Why did septic infection not occur during decomposition of the child, when the offensive discharges occurred? Why should it occur when nothing remained of the fœtus but two pieces of bone, perfectly clean; and the fœtal envelopes, which were firm and organized, with no offensive discharges? No doubt a surface was formed by which absorption could take place, and the exhausted and depraved condition of the patient after the repeated hæmorrhage might account for it.

Portions of the fœtus were probably discharged during the three months, or the placental mass filling the cervix uteri completely might have acted as a plug in retaining portions of it so long. How long the mass protruded is unknown. What I found and had to remedy was the adherent placenta. The only portion of the fœtus left was two small pieces of the frontal and parietal bones; the rest had been discharged or absorbed, nobody knows when.

COITION DURING PREGNANCY.—In the July number of the *American Practitioner*, Theophilus Parvin takes strong ground against coition during pregnancy. He asserts that it violates nature's law as observed in the lower animals, that it is as a rule, odious, if not painful to the woman, that probably half the cases of spontaneous abortion may be attributed to it, and that it aggravates the leucorrhœa and nausea of the early months.—*Louisville Medical News*.

TREATMENT OF SECONDARY PUERPERAL METRORRHAGIA.—Theophilus Parvin, M. D., (*Gynecological Transactions, Vol. V*) discusses rather elaborately the various measures and remedies resorted to in controlling this formidable trouble; calling attention first to uterine compression, where compression is necessary the hand may be applied solely to the abdomen, or with one hand thus used and two fingers of the other hand making counter-pressure upon the posterior portion of the cervix. The use of the tampon, especially when used with vinegar, is questioned, in that it induces a false security converting an open into a concealed hæmorrhage, thereby increasing the peril of the patient. Never tampon if the uterus can contain an amount of blood sufficient to endanger life.

Various authorities are quoted to prove that there may be complete uterine relaxation several days after parturition. He believes that the tampon, when accompanied by manual abdominal compression, will often prove a most efficient means of treating a serious secondary hæmorrhage.

Compression of the abdominal aorta was first advocated in 1797, by Rudiger. This is accomplished by means of the hand introduced into the uterus, pressing through its posterior wall upon the vessel. The newly delivered woman is peculiarly favorable for this method; some most serious cases have been by this method controlled.

Uterine injections should be used carefully, otherwise they may be followed by the most serious consequences. Cold water is recommended for the reason that it is always available; but as a direct hæmostatic, it is powerless—it does good only by inducing uterine contraction. The objections to its use are, first: that it probably must be used in large quantities, interfering with the patient's rest, owing to the unavoidable wetting of the bedding. Second: to the depressing influence of the cold. Hot water is not open to these objections, and as a hæmostatic proves its utility more especially in cases where there is oozing from small vessels. Where the choice is between hot and cold water, the author gives preference to the former. Of all the intra-uterine injections used, the perchloride of iron has been most in favor, especially advocated by Dr. Barnes, the great English representative of this practice. Iodine has been suggested as a substitute for the salts of iron; but as Dr. Barnes says, "the amount of evidence is still too small to justify a decided opinion." Dr. Trask objects to the solution of iron on the ground that it may produce septicæmia; but Dr. Barnes, in his experience, which is certainly very great, has never met with a case "in which septicæmia could reasonably be traced to the practice."

The strength of the solution advised by Dr. Barnes is one part of the liquor ferri chloridi fortior to three of water. Hervieux, for the controlling of puerperal hæmorrhage, uses uterine injections by means of a sound with a double current, and has never met with an accident.. He says that caustic solutions may be injected, if proper precautions be observed, without any bad effects, and that they will ordinarily arrest the hæmorrhage either by causing uterine retraction, or by coagulating the blood at the place of exit from vascular orifices. The following is Hervieux favorite formula:

Chlorure de sodium pur., - - -	15 grammes.
Solution de perchlorure de fer neutre a 30°,	25 grammes.
Eau distillee, - - - - - -	60 grammes.

Let the precautions so strongly urged by Dr. Barnes be faithfully observed—such as completely emptying the uterus, whether of clots or placental fragments, of making the injection slowly and directly upon the bleeding surface, and of securing free exit from the uterus, and the perils attributed to the iron solution, either conjectural or actually observed,

are prevented; especially there can be no considerable clot to distress the patient or by its subsequent breaking down become a source of septic infection, no fragment of placenta to produce a similar infection; and these conditions were found in two of the cases terminating fatally which have been advanced against the practice. Where injecting the uterus is feared, the styptic may be used to saturate a sponge or portion of cotton wool, and this be carried into the uterine cavity and applied to the bleeding surface This plan was resorted to by Schreier as early as 1854, and is highly commended by Dr. Wynn Williams, Winckel, and others.

Cold water poured on the abdomen, after the manner of Gosch; ice applied to the abdomen in the vagina or in the uterus, and ether spray upon the abdomen, are useful remedies in controlling a dangerous puerperal hæmorrhage, providing the irritability of the uterus can be evoked.

Ergot, providing the irritability of the uterus is not gone from loss of blood, may be given hypodermically.

Quinine is useful in hæmorrhages even where there is no malarial fever, and if they occur periodically, this agent is of the first importance.

Opium is an agent for the after treatment in uterine hæmorrhages, rather than for the time of the flooding. It relieves spasmodic uterine contraction; it sustains an exhausted nervous system; it secures rest. Immersions in hot water, varying from twenty minutes to half an hour, has been suggested by Tarnier. and advocated by Bailly.

THE PROPER LIMITATIONS OF EMMET'S OPERATION FOR LACERATIONS OF THE CERVIX UTERI.—Dr. Chas. Carroll Lee, in an article under the above heading, in the *New York Medical Journal*, September, 1881, in conclusion and as a terser resume of his preceding remarks, urges the vital importance of:

1. A more careful and systemic supervision of the lying-in state, and never to discharge an obstetrical patient from your care until the existence of a lacerated cervix or perinæum has been ascertained and, if possible, remedied.

2. When cases of lacerated cervix present themselves, never to counsel, or consent to, operative treatment until all traces of pelvic inflammation are subdued.

3. In the selection of cases for *trachelorrhaphy*, to be guided *solely by the pathological import of the laceration, and its probable influence upon* the pelvic condition.

4. In the treatment of cervical lacerations, when they really need treatment at all, adhere resolutely to trachelorrhaphy until time—that final crucible in which all scientific improvements must be tested—shall yield us a surer and better method than that devised by the patient ingenuity of Thomas Addis Emmet.

REMOVAL OF THE UTERUS FOR CANCER.—The November number of the *New York Medical Journal and Obstetrical Review* contains a "special article" by Dr. Andrew F. Currier, of New York, in which the various methods for removing the entire uterus for cancer, as practiced by Freund, Schroder, Czerny, and others, are reviewed, as well as the general question of the advisability of removing the organ. He thinks the advantages of the vaginal method over that of Freund (by laparotomy) are enormous—there is but one section of the peritonæum, the intestines are unharmed, there is a better opportunity to discover diseased tissue, which is most likely to be situated in the vicinity of the cervix, and, most important of all, the patients often survive, which is rare by Freund's method. But most patients are not likely to be benefited by either of these serious operations; the most hopeful cases will be those in which the patients are warned of their danger in the early stages of the disease, and in such cases Schroeder's supra-vaginal excision of the entire cervix is most likely to prove of service This operation, while not so radical as removing the entire organ, and hence not so efficient in cases involving the tissues above the internal os, is far less grave, and is, besides, more thorough than amputation of the cervix as it has ordinarily been done in the past. In those rare cases, however, in which the body of the uterus alone is involved, there is no alternative to laparotomy, either by Freund's operation or by some modification of it. As to drainage—a most important item in such cases—a perfect system seems impossible, but Bardenheuer's, although in the hands of others it has not fulfilled its author's expectations, affords as good results as any yet devised. As to the broad question of whether cancer of the uterus, and so cancer in general, can be radically cured, the anthor thinks the logic of events points to its approaching solution.

OLD OBSTETRIC PRACTICE IN THE RURAL DISTRICTS OF OHIO.—Dr. E. B. Stevens (quoted by Englemann, *Trans. Amer. Gyn. Society*, 1880, p. 235) says: "When I began to practice, a good many years ago, the almost universal habit of confinement throughout the regions of southern Ohio was about as follows: Two old-fashioned, straight-backed, slip bottomed chairs made the lounge, one erect, the other turned down; a few old comforters upon this framework completed a very comfortable couch. The husband took his seat first, astride, the wife reclining in his arms, where she remained until the labor was completed, unless there was much delay, in which case the patient was walked about or assumed any other position as dictated by fancy or impulse. The position of the accoucheur was upon an inverted half bushel measure, so placed that he sat just between the limbs of the patient. Labor completed, the soiled clothes

were changed and the patient placed in bed. This position was not, certainly, a bad one for all parties, with the exception of the husband, who, in tedious cases, suffered rather severely; but then this little tax on his affectionate nature was, in those days, considered the very least return he could make for the mischief he had occasioned." This same position is taken in very many States.—*Detroit Lancet*, December, 1881.

LACERATION OF THE CERVIX UTERI AS A CAUSE OF FALSE LABOR PAINS.—In the New York *Medical Journal and Obstetrical Review* for August, 1881, Dr. George H. Rohe, of Baltimore, relates two cases that have come under his observation, in which the occurrence of false labor pains, of considerable severity and persisting for a length of time before labor actually began, seemed to him to be due to the presence of laceration of the cervix. With a single exception, he remarks, authors make no mention of the relations between the two conditions. The exception noted is Goodell, who relates a case in which pregnancy took place twice in a patient with lacerated cervix, and in which the labor was painful and difficult each time, the patient being confined to bed by her suffering for a month previous to the termination of the labor. The only other reference to the influence of lacerated cervix upon the course of labor, which he has found in literature, is confined to cases of dystocia due to cicatricial contraction of the cervix. This was not present in the two cases reported.—*Detroit Lancet*, Dec., 1881.

VAGINAL EXTIRPATION OF THE UTERUS.—Dr. Chr. Fenger (*Chicago Med. Review*) reports an important and interesting case of cancerous uterus which he removed through the vagina. The case was successful, both as regards the operation and the recovery of the patient. His after treatment was continuous irrigation with one-tenth solution of thymol. Four weeks after the operation the patient was up and about.

PERIODICAL APTITUDE FOR IMPREGNATION —Dr. Cohnstein (*Arch. fur Gynak.*, xviii 1, 1881) believes that some women display a periodical aptitude for impregnation; that is to say, that they are most apt to conceive during some particular month of the year. He states that it is a very common thing for the birthdays of all the children of a family to fall in the same month. This is more generally the case in families in which the births occur at regular intervals of one, two, three or more years, but it is by no means uncommon in those in which the births are far between. The inference seems to be that in cases of sterility for which no physical cause can be ascertained, the hope of ultimate fruitfulness should not be given up until several years have passed without the occurrence of conception.—*N. Y. Med. Journal and Obstetrical Review.*

OVARIOTOMY UNDER "MODIFIED LISTERISM."—Dr. Geo. Granville Bantock, in the *Lancet* for Sept. 17, 1881, describes his present method of performing ovariotomy. By the term "Modified Listerism," he means that all the manipulatory details of "Listerism" are followed during the operation, but for the spray, etc., plain water is used instead of what was supposed to be a germicide solution of carbolic acid. The instruments are kept covered in trays with warm water, the hands and sponges are washed with the same, and a spray is made to play *over*, but not *upon* the abdomen. Particular attention is drawn to the mode of using the spray. Previous to October last it was directed upon the abdomen from the right front, so that whenever the parietes were lifted up the cold acid vapor was forced into the cavity from a distance of about four feet. The author thinks that this continuous blast of spray, passing freely as it did over all the parts exposed, produced a very decided cooling effect. The powers of the patient were thus inevitably depressed, and an unnecessary and injurious amount of carbolic acid was thrown upon the peritoneum. Now, following the example of Dr. Keith, the spray producer is placed at a distance of eight or ten feet behind and to the left of the patient, so that the spray passes over, but does not fall upon the field of operation, except in very minute quantity, and without any cooling effect. In this way the peritoneal cavity, in sponging out or looking for bleeding points, is left untainted, and the patient is not chilled. The spray is never used for dressing after the operation, even in drainage cases.

It may be in the recollection of some that at the time of reading of the author's paper before the Royal Medical and Chirurgical Society, it was stated that he had already reduced the carbolic solution to 1 in 100, and intimated that in consequence of the improved results obtained, he should probably dispense altogether with the phenol. After employing this solution in twenty cases, with only two deaths—one from shock and the other from acute uræmia—and with a diminished pyrexia among the recoveries, two ovariotomies were performed and a combined oophorectomy and hysterectomy with a further dilution of the solutions to 1 in 150. These cases proving still more clearly that the motive was in the right direction, he finally threw aside *all* the acid, and resorted to the pure water method now followed with apparently equally good results.—*Med. News and Abstract.*

PROCEEDINGS OF THE COLORADO STATE MEDICAL SOCIETY.

ELEVENTH ANNUAL SESSION.

The Eleventh Annual Session of the Colorado State Medical Society was held in the Masonic Hall, Leadville, commencing on the morning of Tuesday, September 13th, 1881. The meeting was called to order by Dr. F. J. Bancroft, President. After prayer by the Rev. Mr. Mackey, and the reading of the minutes of the last session, the following was adopted on motion of Dr. Addison Hawkins:

Resolved, That this Society endorses the medical journal known as the *Rocky Mountain Medical Review*, and extends the privilege to its editor of having access to the proceedings of the Society for publication.

Dr. Dougan, as Chairman of the Executive Committee, presented the hospitalities of Leadville, which were accepted with an expression of thanks by the President. After the reports of committees and the transactions of executive business, a number of interesting articles were read; but owing to the late hour at which we received the report of the transactions, we can only draw attention to two of the papers which we select on account of their relation to Colorado climate.

The President, Dr. F. J. Bancroft, delivered a very able address, which we hope to notice at a future time.

MALARIA.

Its Existence or Non-Existence in Colorado. By Jesse Hawes, M. D., Greeley, Colorado.

Mr. President and Gentlemen:—At the meeting of our Society last year your reporter was assigned to the duty of presenting a paper at this meeting upon the existence or non-existence of malaria in Colorado. By malaria, let us be understood, as meaning the *cause* of intermittent and remittent fevers

Had this duty been assigned to him a few years before he would have assured himself that his labor, and the *result* of such labor, would be similar to that reported of that naturalist who essayed a treatise npon the indigenous frogs of Ireland. The tale is that after much painstaking in the matter, he produced a treatise remarkable for its brevity and truth, and in substance, as follows: "The indigenous frogs of Ireland—there are none."

The experiences of quite a number of medical acquaintances, narrated to him, had fostered this idea. The topography of Colorado, so opposite to the topography af the country in which are found the ague-haunted homes in the valleys of the Ohio and Mississippi, strengthened the idea. The laity—non-professional friends, who had left sallow kindred and yellow friends shaking (but not with pleasant emotions) by the bayous of the South, in the cabins by Western sloughs, near the swamps of Michigan, or in palatial homes by the sea, scouted the idea that Colorado could be the abiding place of the marsh miasm.

Nor was most eminent and respectable authority found absent from the ranks of such believers. The erudite author of "The Diseases of the Interior Valley of North America," believed that malaria was limited by an altitude less than that of most portions of our favored State, and in a recent work of Professor Bartholow the same teaching is annunciated in the following words: "One important factor is elevation, malaria not breeding at an altitude over 5,000 feet above sea level; this seems to be the maximum limit. The apparent exception to this is afforded by the so-called 'mountain fever' of Colorado."

In a personal communication of Dr. Bartholow he explains that that although he had observed marked cases of malarial fever in Colorado, all of his cases appeared in persons who recently resided in the miasmatic portions of Kansas, Missouri and Illinois.

Taught by so many opinions to consider our Mountain State without the miasmatic pale, I was unexpectedly called, after several years residence in this region, to question the orthodoxy of the views expressed above. When requested by our President to assist in obtaining information upon this subject, the duty was accepted as one full of interest, not only to your reporter, but to all medical men since their opinions are often earnestly sought for the sake of stricken friends elsewhere resident, and that the valued experience of the profession of our State might be laid under tribute, and assist in elucidating the question, the following circular was sent to a large number of medical gentlemen:

CIRCULAR.

GREELEY, COLO., February, 1881.

Dear Doctor:—Among the special subjects upon which a report is expected at the next annual meeting of the State Medical Society, is the subject of malaria, particularly with reference to its appearance or non-appearance in Colorado.

I have been requested to prepare such report.

The subject is one of much importance, less, perhaps, to the citizens of Colorado than to the many malaria-poisoned residents of other States.

I would be glad to place among the proceedings of the Society an epitome of the experience and opinions of the physicians of all portions of our State, and personally would feel under obligations for a full reply to the questions below. Hoping to receive some reply, I am, fraternally yours,

JESSE HAWES, M. D.,
Greeley, Colorado.

1. Have you seen in Colorado cases of intermittent or remittent fever?

2. Where they your own patients or patients of another physician?

3. How many of such patients were natives of and always residents in Colorado.

4. How many had not resided permanently or temporarily in a malarious region previous to coming to Colorado?

NOTE.—Please exclude all persons who were residents of a malarious district within a period of two years previous to appearance of malarious disease in Colorado, and also exclude all cases in which a pulmonary tuberculosis might have given rise to fever and intermissions similar to malarial fever.

5. What was the topography of location most occupied by patient previous to illness—high or low (relatively), dry, moist, forest, plain, mountain, soil recently excavated or ploughed?

6. Did acute cases yield readily to anti-malarial remedies?

7. Do your patients (persons coming from ague districts and affected with malarial diseases) recover without anti-periodic treatment?

8. In those recovering by aid of medicine is long-continued, anti-malarial treatment necessary?

9. Have you any reasons for regarding the so-called 'mountain fever' as a malarious fever?

10. What are those reasons?

To this circular a generous number of replies were given, for which your reported would express his high appreciation, since of whatever value this paper may be possessed in determining the question under consideration, its *most* valuable portion in the testimony of the intelligent profession of our own State, than whom none others should be entitled to more thoughtful consideration on this subject.

It seems proper to mention here, some of the views that have been held as to the nature of malaria.

The most recent is that of Professor Klebs and Signor Thomasi-Crudeli, the organisms which, according to their Crudeli observations, are to be regarded as the true causes of malaria, since they are to be found in the infective fluids obtained by the earth from the air and by cultivation as in the bodies of infected animals, belong to the genus

bacillus. In the soil of malarious regions they are found in the form of numerous spores, which have the power of independent motion, and strongly refract the light. They have an elongated oval figure, and a maximum diameter of 0.95 micro millimeters. They develop either within the body or in cultivating apparatus into long filaments, which, at first, are homogeneous. Later on the filaments, undergo transverse fission which converts them into a chain, and in the interior of each link new spans develop. The first formation of these spores is parietal, but, finally, almost the whole interior of the link becomes filled with these little bodies.

This morphological property seems to correspond to a particular species of bacillus, which we propose to call bacillus malariae, since we have seen it develop within the bodies of animals infected with malaria.

In regard to the biological properties of this plant we may mention besides that it requires for its development the presence of free oxygen. It does not develop in water, but does so in liquids rich in nitrogenous substances, such as solutions of gelatin or albumen in urine and in the liquids of the organism. Its greatest development in the body or infected animals occurs in the spleen and the medulla of the bones, which, in some of our cases, contain long and homogeneous filaments which measured 0.06—0.084 millimeters in length and .0006 millimeters in diameter. This circumstance is noteworthy since it is precisely in these organs that the most characteristic anatomical alterations are to be found in consequence of grave malarious fevers in man.

A few years since Professor Salisbury made an elaborate attempt to prove that Palmellae where the essence of malaria. His foundation for such belief may be briefly stated. On examining the saliva of persons sick with intermittent fever, he found, among a great variety of zoosporoid cells, animalcular bodies, etc., etc., constantly and in great abundance, minute oblong cells, either single or aggregated, consisting of a smooth cell wall with a highly clear, apparently empty, space between the outside cell walls and nucleus, which he concluded were not fungoid; but cells of an algoid type, resembling strongly those of the palmellæ. He satisfied himself that these peculiar cells were the only ones always present in ague localities, and not present at a distance from such places; and, finally, digging up a mass of marsh soil, on which the plants were growing, he placed it where certain persons would be exposed to its influence, and found they contracted from it malarial fever.

The teachings of Professor Salisbury have not been received; placing the most liberal construction upon them, they simply prove that certain palmellæ grow on damp soils. That *in* such *soil* the malarial poison often exists; that persons exposed to the emanation of such soil contract

intermittent fever. The poison may not be the palmellæ and from further reasons probably is not. If the palmellæ be grown away from the bog earth and introduced in the system *alone*, producing by their presence intermittent fever, there could be no further doubt; but when swallowed and inhaled by thousands away from the emanations of marsh lands, they have not produced it.

There are other reasons why it is almost certain that the palmellæ can not be the essence of malaria. Palmellæ grow in the light. Malarial poison in the blood vessels, must be in a great measure, removed from the light. Palmellae live and grow when repeatedly frozen and thawed? The action of frost is to destroy the activity of malaria. The life and growth of the palmellae demand no decomposition. Vegetable decomposition is a necessity of malarial activity.

Professor H. C. Wood suggests that the poison of malaria is an organic principle, or possibly several principles produced during vegetable decay under certain conditions.

Dr. Bence Jones, finding in healthy blood a substance very similar to quinia, and observing ague to be cured in its early stages (before profound changes in the fluids and solids have taken place) by the administration of quinia, suggests that intermittent fever is due to a destruction of animal quinia.

Enough theories as to the supposed cause of ague have been presented to show that in the present state of medical knowledge the specific cause essential to its production is unknown. In asking, then, the profession of the State to elucidate the question as to the presence or absence of malaria in Colorado, their decision could not rest upon the presence of "bacillae," "palmellae," "certain organic principles," nor the absence of animal quinia in the blood; well marked cases of intermittent fever in persons not recently in a malarious region, and not due to other known local irritation, must be our sole criterion.

The experience of your reporter is confined to a single case, but one so typical in its characters as to place its nature beyond question. A condensed statement of this case is appended:

Flora M——, aged 2 years; born in Colorado; never a score of miles from place of nativity. Called to visit patient September 10, 1874. History—patient had enjoyed fair health till September 6th, when, at 4 A. M., she awakened her parents, being in a hard "chill"; the chill continued for a half hour when fever supervened for two hours, and in turn was followed by profuse perspiration for a shorter period; during remainder of day patient was listless, but so easy as to give no anxiety to parents, and no medical attendance was sought; 7th, patient seemed nearly as well as before attack of previous day; 8th, was a repetition of

the 6th in all particulars, and 9th like the 7th. On the 10th, a little later than 4 A. M., the chill again returned, when the parents became alarmed and sought my advice. Calling during the stage of perspiration, I found the child with a slightly increased temperature, light furred tongue, no abnormal condition of bowels, chest or head; to no local lesion could the disturbed condition of the patient be attributed; no neglect on the part of the parents could be deemed a cause.

Filled with the idea that malarial fever, contracted in Colorado, was an impossibility, but unable to place this patient's disease elsewhere in any nomenclature, I gave a mild placebo and with much curiosity as to the future, I determined to wait and watch. In driving away from the house, I observed that very near it was a shallow mud hole, several rods square, filled with stagnant water and weeds, many of which were in a state of decay. Inquiry developed the fact that this pool had existed for many weeks, and the child had played about it much of late.

Calling the 11th I found the patient considerably better but sallow, appetite poor, and little inclination to play, but with no history of chill or fever for that day. On the 12th I was met with the statement that her usual paroxysm had returned between 4 and 5 A. M. Still doubting the presence of malaria in Colorado, and more strongly doubting its absence, I changed my placebo. The 13th and 14th were a repetition of the 11th and 12th. At each previous visit I had *most carefully* sought some other explanation of the disease than malaria. The parents were persons of more than ordinary intelligence, and as far as close observation would go, heartily gave me their assistance.

On the 14th, unable longer to resist the logic of facts, unable to attribute the illness to any other cause, I gave my little patient a dose of mass hydrarg, and followed it with quinia. Further visits for malarial paroxysms were unnecessary—indeed, with iron for a week or two, and quinia, one day in each week, with a change of residence as early as convenient, my occupation in the treatment of that disease was gone, and with it went all reasonable doubt as to the possibility of malaria being developed in the future Centennial State.

The patient was under my observation and professional care several times in subsequent years, but at no time presented any tendency to a return of the intermittent that made miserable a fortnight of her babyhood.

According to my best judgment this is the only case of malaria, contracted in Colorado, that has fallen under my observation. With malarial eyes and an intermittent observation, it might be easy to swell the number of cases to any limit. With such a predisposition in the observer, the usual daily increase and diminution of heat in *all* febrile

cases would be recognized as due to an intermittent-malarial-complication, and confirmation of the idea could be found in the febrifuge action of quinia; but quinia lessens temperature in large doses in all fevers, and may abort some diseases not specific.

A review of the above reports presents several noteworthy facts. First, and least important, it quite effectually disposes of the name "mountain fever." Only one gentleman expressed his belief in the existence of this as a special disease, separate and distinct from both the malarial and the typhoid. In an interesting letter from this gentleman, while expressing his belief in the existence of such disease, he confesses his inability to sharply differentiate it.

If, then, as Americans, we claim the right to decide the question by the ballot, "mountain fever," with our present knowledge, must be declared to have had an existence only in name, and, as physicians, we will congratulate ourselves that this formidable beast was nothing but a bugbear.

Next, it is *certain* that cases of intermittent and remittent fevers *may* be developed in Colorado, and that the doctrine so long held, as to the influence of malaria being *nil* at an elevation greater than 5,000 feet, must be revised and corrected.

While the fact is established as to the development of cases of malarial fever in Colorado, the care taken to secure reports from so large a number of physicians in our State, develops the equally important fact that such cases are of *rare* occurrence, many of those reporting the few cases having been in Colorado years, varying in number from five to fifteen, while their field for observation has been as extensive as has fallen to the fortune of our best known medical men.

Much inquiry has confirmed in the most positive manner what has heretofore been generally believed: to our green hillsides and snow-capped mountaina, to our broad plains and cool canons, the sad, sallow, sickly, "spleeny" victim of marsh miasm may direct his weary, staggering steps, and as Pilgrim was released of his load at the foot of the Cross, may he hope, in the shadow of our gold and silver laden hills, to be freed of the enervating malady that is weighing down his mind and body.

The other paper referred to was by Dr. D. H. Dougan, of Leadville, the subject was

ASTHMA.

When the subject of asthma was assigned to me at the last annual meeting of this Society, I felt that it would be a labor of love to collect information that might be sent abroad for the benefit of the vast army of

asthmatics, who, in all portions of the globe, feel that they would give all—home, wealth, and even friends—in exchange for the blessed privilege of breathing freely the pure air of heaven, but as I approached the task its magnitude repulsed me, and the difficulties to be met in collecting data for so important a work seemed insurmountable. I have therefore to offer what is little better than an apology for an unperformed duty, and to submit to you a blending of fact and opinion, which, though unsupported by statistics, will, I believe, reflect fairly the expression of asthmatics who resort to Colorado for relief from their trouble.

Perhaps no one realizes, unless like myself, he has had a personal experience with this most distressing disease, the vast number of persons who have found an elysium in the pure air of our mountains, valleys and plains. Among asthmatics there is a bond of fellowship and sympathy that serves to introduce them to each other; a community of sentiment and interest that somehow enables one to recognize another, and by these mutual recognitions, and comparisons of experience, we are enabled to realize that our number in Colorado is legion.

The marvelous and almost instantaneous effect of coming under the climatic conditions of this portion of the Rocky Mountain region furnishes the greatest obstacle to collecting the information on this subject which would prove so valuable could it be obtained. The asthmatic no sooner reaches our magical land than he dispenses with physicians, and passes from professional observation. From an anxious, care-worn, haggard sufferer, spending days and nights of unutterable torment, a constant care to family and friends, a source of solicitude and anxiety to his physician, he is changed at once to an active, useful member of the community; instead of struggling night after night for the least modicum of air wherewith life may be sustained, "he lies him down to sleep and pleasant dreams," and the days that before were spent in partial rest from the terrors and exhaustion of the nights are now devoted to the accomplishment of that object of every true Coloradoan, viz., "striking it rich," whether at desk or in field, in workshop or in mine.

Since the famous and exhaustive treatise of Hyde Salter, published a quarter of a century ago, it may be fairly doubted if anything of value has been added to our knowledge of the pathology and treatment of asthma, and I shall not detain you at this time by a lengthy discussion of what I consider a fruitless topic. That it depends on a nervous cause, either reflex or central, and that the actual condition consists of spasmodic contraction of the muscular structure of the bronchial tubes may, I think, be laid down as the opinion of the majority of the profession, and that therapeutic science has failed to discover a specific, or even provide measures that generally prove curative, may be regarded as a

melancholy fact. The benefit that sometimes resulted from a change of residence, even to short distances, has long been recognized as a peculiarity of individual cases, but not until within a comparatively recent time has it been known that there existed a place, where so large a proportion of cases found a complete relief.

The fact to which I have already referred as an obstacle to the collection of information, the fact that asthmatics as a rule, are not patients in Colorado, will explain the difficulty if not absolute impossibility of forming any estimate of those who owe to Colorado their complete restoration to health. In the discussion that I hope will follow this paper, I expect to hear as the common testimony of physicians, that numbers of those with whom they are brought in daily contact were asthmatics before coming to our State, and I believe further, that their observations will confirm the opinion to which my experience has led viz., that the uncured cases furnish an almost infinitesimal proportion of the whole number. I believe that could the knowledge we are in possession of be circulated all over the world, that it would do more to increase the population of our State than even the reports of its limitless wealth of gold and silver.

To what our climate owes its curative effect in this disease I have not even attempted to guess, unless it be the simple result of the rarefaction of the air. This idea is sugested by the fact that about ten years since Hanke and Waldenburg proposed a pneumatic cabinet in which the asthmatic patient was placed, and the air partially exhausted, with the result of, in many cases, relieving the paroxysm. Here we have a pneumatic apparatus of grandest proportions, its ground floor, diversified by mountains, parks and canons, its walls, the limitless realms of space, and its roof formed by the clear vault of heaven, covering thousands of square miles, containing nearly everything of use or beauty, and furnishing without cost or effort every degree of rarefaction of air up to that found at altitudes of fourteen thousand feet. We find, too, as if in corroboration of this hypothesis, that in some cases the degree of relief seems dependent on altitude, and that at the lower level of the plains the relief is but partial, while that attending increasing altitudes is complete.

The expression "restoration to health," as used in this paper must be modified in order to prevent a false impression gaining currency. The asthmatic on arrival in our midst, cannot restrain his exprsssions of delight and gratitude at the wonderful relief experienced, and fondly imagines himself cured of his disease. His health seems perfect, his weight increases, and his spirits revive, He feels himself physically the equal of his neighbor, and engages in labor, business or recreation, without tnought of asthmatic paroxysms marring his plans. But when after a

time he yields to the necessities of business or the promptings of affection, and assays to visit his old home, he realizes that his supposed cure was but a suspension, and that the disease returns with all its former severity, to again disappear on returning to the plateaus or mountains of the Rocky Mountain region. If time and opportunity would permit, many interesting facts might be noted in connection with individual cases. In many instances an absolute point may be named, below which the symptoms may remain in greater or less severity, and above which they entirely disappear.

I can only regret the fact that I have not found it possible to do justice to the subject assigned me, if it were possible to make a full and complete report its importance would warrant an indefinite amount of labour and trouble. Aside from the advantage that would accrue to the State from a complete collection of facts, and their circulation, the relief of one poor, suffering asthmatic would compensate for a large expenditure of time and money, and I suggest the inquiry whether it be possible by systematic, organized effort on the part of this Society to collect the statistics of asthma in the State for the purpose of publishing them under the authority of our professional organization.

NOTES AND ITEMS.

A MEDICAL SONG FROM "PATIENCE."

A New York medical man,
A very-much-advertised man,
  A pills-in-variety, talk-in-society,
Each-for-himself young man.

A Philadelphia man,
An *Index-Medicus* man,
  A think-it-all-gammon, this talk of Buchanan,
Great-medical-centre young man.

A Boston medical man,
A hyper-historical man,
  An ultra-persimmon toward medical women,
A Harvard-or-nothing young man.

A Chicago medical man,
A wide-awake, ethical man,
  A good-as-the-rest-of-you, more-than-abreast-of-you,
Down-on-the-East young man.

The *Medical Times* says that at a late meeting of the Canada Medical Association Dr. Slayter introduced the following resolutions: "*Whereas*, The system of specialism and specialists, which at the present obtains to a certain extent in the Dominion, and which has developed to a certain extent in the neighboring republic, is for the most part the outgrowth of superficial professional education and want of success as practitioners of medicine and surgery; therefore, *Resolved*, That it is the opinion of this society that specialism should be discountenanced by the members of this society, and that specialists should be treated and looked upon as irregular practitioners, except in rare cases, where long experience, extended study and peculiar aptitude have placed a medical man in a special position toward his brethren. *Resolved*, That the members of this society pledge themselves to do all in their power to check the growth of this species of evil."—*Detroit Lancet.*

At a late meeting of the American Medical Association, Dr. E. S. Dunster offered the following: "*Resolved*, That the spirit of the code of ethics forbids a physician from prescribing a remedy controlled by a patent, copyright or trade mark. This, however, shall except a patent upon a process of manufacture or machinery, provided patent be not used to prevent legitimate competition; and shall not be used to designate a brand of manufacture; provided, that the article so marked be accompanied by working formulæ, duly sworn to, and also by a technical, scientific name under which any one can compete in the manufacture of the same."—*Detroit Lancet.*

Dr. J. H. Kimball has been appointed Assistant Surgeon, with the rank of Captain, to the First Batallion, National Guard, State of Colorado.

On August 10th, at the age of fifty-two, died Dr. Otto Spiegelberg, Professor of Obstetrics in the Uuiversity of Breslau. The second edition of his work on obstetrics had just been completed.

In Paris there is but one professor of obstetrics to 2,550 students, and one clinical service for 5,100 students. In the rest of Europe there is one professor to 187 students.

Dr. Theophilus Parvin has been elected to fill the chair of obstetrics in the medical department of the University of Louisville.

RELIGION AND NURSING.—Speaking about the character of the attendants of a sick person, Dr. J. M. Fothergill says: "A pious widow, with dyspepsia and strong religious convictions, is a ghoul when illness is about. She sucks the life out of an invalid like a moral vampire. As life ebbs she is sustained, and when the invalid has passed the portals of

another world she goes away edified, strengthened, and encouraged in her murderous mission, fully prepared to extinguish the lives of any number of relatives if ill luck should prostrate them upon the sick bed. —*New York Medical Record.*

A HOMŒOPATHIC INSANE ASYLUM.—The homeopathists of Massachusetts are making an effort to have a state asylum for the insane placed in their hands. If the experiment, when undertaken, succeeds—*similia similibus curantur.—Cincinnati Lancet and Clinic.—N. Y. Med. Record.*

NERVE-STRETCHING has been abandoned by Billroth after a fair trial. It does not seem to be making a favorable impression.—*N. Y. Med. Record.*

"HOW BABY WAS SAVED" is the title of a pamphlet now being widely and gratuitously distributed by the sanitary authorities of London. It was written to counteract the influence of "How Baby was Killed," a tract which had been distributed by the anti-vaccination society. "How baby was Saved" gives an account of the conversion of an anti-vaccinator, who is held up in the other tract for admiration.—*Cinn. Lancet and Clinic.*

THE LIVER PAD OUTDONE.—The Michigan *Medical News* tells of a doctor in Iowa who has invented an anal pad, by which the fæces are changed into gas, and the gas is deodorized, purified and burned as a chamber light. It acts on the same principle as Holman's Liver Pad, and when worn over the mouth sweetens the breath, prevents cursing and swearing, and destroys the appetite for tobacco—*Gaillard's Med. Jour.*

Doctors were humourously compared by Addison to the army of ancient Britons, described by Julius Cæsar: "Some slay on foot and some in chariots, but those in chariots do the most execution."—*Canadian Journal of Medicine.*

SCENE AT THE UNIVERSITY OF STRASBOURG.—(An actual occurrence.)—Two American students, registering for the coming summer, the one from Cincinnati, the other from Boston. The Rector smiled approvingly at the Cincinnatian, inquires after several prominent German students, and refers to the Probosco Fountain and the Art Museum. As the Boston man registers, the Rector musingly says, "Boston, Boston, *Nord oder sud Amerika?*" The Hub-ite walks away with unconcealed disgust, muttering, "Is it possible to learn anything from this blarsted Dutchman, who doesn't even know that Boston could hide from such towns as this?"—*Cinn. Lancet and Clinic.*

THE
ROCKY MOUNTAIN
MEDICAL TIMES.

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MEDICAL, SURGICAL AND OBSTETRICAL SCIENCE.

FEBRUARY, 1882.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

By W. R. Whitehead, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER.

LECTURE III. STRICTURE OF THE URETHRA.

This morning I shall endeavor to interest you in the subject of stricture of the urethra. Any unnatural narrowing of the urethra is called stricture; but obstructions of this canal, caused by polypi; or by inflammatory occlusion; or by the effacing of the urethra by tumors of the penis, or other rare and similar causes should not be so called.

I shall adopt the accepted classical division of the subject, and speak of spasmodic stricture, and of organic stricture. The first is due to the involuntary contractions of the circular fibres of the bulbo-membranous portion of the urethra, and of the muscles which surround this part. The second, or organic stricture is permanent, and is usually caused by a previous gonorrhœa and gleet. This kind of stricture sometimes has a traumatic origin, or there is occasionally congenital narrowing of the urethra at the meatus. You should, however, recollect that the meatus and the membranous portions of the urethra, are naturally the narrowest parts of this canal. You will remember that I told you in the previous lecture, that acute inflammation of the prostate during gonorrhœa may close the urethra and occasion retention of urine; hence inflammatory occlusion of the urethra occurs in the prostatic portion of this canal, but the prostate is rarely, if ever, the seat of organic stricture.

One of the most eminent specialists of the diseases of the urinary organs, Sir Henry Thompson, has expressed himself very emphatically concerning spasmodic stricture: He asserts it to be a useful excuse for the failure of instruments; and no doubt sometimes it is. But such an expression, from a specialist so eminent, is liable to mislead the inexperienced, regarding the obstacles which spasmodic contraction of the urethra sometimes opposes to catheterism of the bladder. Thompson regards the spasmodic contraction of the urethra, as a temporary condition unworthy the name of stricture, and that may be overcome by the skillful and jndicious use of the catheter. He recognizes, as stricture, only permanent and organic coarctation of the urethra. Van Buren and others, however, give a fair consideration to the subject of spasmodic contraction; and I believe that the division of the subject of stricture into that of spasmodic and organic stricture is fully justified. The causes that excite spasmodic contraction of the bulbo-membranous portions of the urethra are numerous, and sometimes act with great energy. In a man of nervous and excitable temperament, mental emotion due to apprehension of being hurt by the catheter, or shame, or modesty excited by the presence of a class of students, exerts a powerful influence in causing involuntary contraction of the bulbo-membranous portion of the urethra. When the catheter reaches this point, the muscles which here surround the urethra, sometimes called the "cut-off muscles," may by reflex action be excited to contraction of very uncertain duration, so that to desist for a time from attempts to pass a catheter may be very judicious on the part of the surgeon. Any local irritation of the urethra in its bulbo-membranous portion, as, for example, a patch of inflammation of the urethra, which is the seat of gleet, will excite spasmodic contraction, and cause the catheter, sound or bougie to be tightly "grasped," and give the sensation of an organic stricture when no such condition exists. I recall to mind the case of a young man, who was examined by a most distinguished and capable surgeon, and pronounced to have organic stricture under just such circumstances as the above. Subsequently he was cured of his gleet, and no stricture was found to exist, and neither had any ever existed. This spasmodic contraction of the bulbo-membranous portion of the urethra, due to reflex action may be caused by some neighboring irritation about the anus, rectum, prostate, or bladder. Hæmorrhoids, fissure of the anus, thread-worms, prostatitis, or vesical inflammation, and especially very acid urine may occasion this spasmodic contraction. A hot bath, and an opiate by the rectum, and alkaline drinks, as the citrate or acetate of potassa largely diluted, and drank freely during the day, will usually correct the irritable condition of the urethra due to acid urine. When catheterism of the bladder is urgent

to relieve retention of urine, an anæsthetic, as ether, will be required to cause relaxation of the spasm. I will direct your attention to the fact that some of the fibres of the sphincter ani muscle are continuous with those of the accelerator urinæ muscles, and that any irritation about the anus necessarily causes more or less spasmodic contraction of the urethral muscles.

The diagnosis of spasmodic stricture is easy, because it exists only at the time of attempts at catheterism of the urethra; there is no diminution in the size of the stream of urine, neither is it obstructed or altered from a natural stream. Dismissing the subject of spasmodic stricture, I shall take up that of organic stricture, which is a very frequent disease, and one which will engage our attention for the next two or three lectures. One of the first things that will call your attention to the probable existence of organic stricture is that you will be consulted for gleet, the patient sometimes not suspecting that this is often the initial period of stricture, he comes to be cured of his gleet. Sometimes, if the stricture is far advanced, the stream of water is very small and altered in its shape, so that the patient consults you for stricture, as the symptoms are unmistakably those of narrowing of the canal of the urethra. There are certain peculiarities about the stream of urine that are often characteristic: a twisted stream, however, has nothing peculiar about it, unless the twist is much exaggerated like that of a cork screw. Ricord had a humorous way of questioning his patients about the shape of the stream of urine, which was not devoid of a certain practical instruction. He would say, "Sir: How do you make water? Is your stream like a cork-screw; like a knife-blade; is it forked; does it sprinkle like a watering-pot; does it dribble and drop on your boots, or at times are you unable to make water, or in other words have you ever had retention of urine?" These questions, when occasion should require, addressed to a young or middle aged man may prove of service. Passed the age of fifty, hypertrophy of the prostate may complicate stricture.

The most frequent seat of stricture is in the bulbo-membranous part of the urethra; the next most frequent seat of stricture is near the meatus, about the fossa navicularis, or within an inch or two inches of the meatus; the next most frequent seat is between the other two just named. Out of the two hundred and seventy specimens of stricture examined by Thompson, two hundred and twenty-six were single strictures. So you will see that a single stricture is the most frequently met with, and when observed is most commonly found in the bulbo-membranous portion of the urethra. However it is quite a common thing to find two or more strictures of the urethra. Usually, if a stricture is discovered in the anterior part of the urethra, you are very apt to find a tighter one in the bulbo-membranous

part of this canal. Of the two hundred and twenty-six single strictures examined by Thompson, one hundred and eighty-five of them were in the bulbo-membranous portion. You may ask, why it is, that stricture should be found so frequently at the bulbo-membranous part of the urethra. I have pointed out to you that this is naturally a constricted part of the urethra, and that this part is the frequent seat of inflammatory action following gonorrhœa. There are patches of inflammation at this part, as, at or near the fossa navicularis, and which are the seats of persistent gleety discharges. Hence you will perceive the importance of devoting your attention to the cure of gleet, to avoid the ulterior consequences which may follow in the shape of stricture.

In the study of the pathology of this infirmity, recollect that inflammation is the active cause. Beneath the mucous membrane of the urethra, at those parts which are the seat of gleet, there is sometimes an exudation of plastic lymph that will rapidly form a stricture. The patches of inflammation in the urethra left after a gonorrhæa are a constant source of congestion of the sub-mucous tissue, varying in intensity and degree, and there is a constant tendency to the proliferation of the tissue elements surrounding the chronically inflamed parts of the urethra. In fact, a new tissue appears by the proliferation of the connective tissue elements, forming a dense and inelastic tissue of a fibrous or inodular variety. In its formative stage this tissue contains spindle-shaped cells. Finally, however, the pathological process involves different degrees of density of this tissue, from an easily dilated stricture to the hardest and most compact masses of inodular tissue; such as is met with in an old stricture of traumatic origin. Bear in mind that this pathological tissue has a constant tendency to contract, and to become denser and harder. Organic strictures present three different varieties; *first*, the *linear*, which may be a simple crescentic fold of a few lines only, in thickness; or, *second*, the stricture may be annular and from a quarter of an inch or more in thickness; and, *third*, the coarctation is known as the tortuous stricture, and which, as its name indicates, presents an irregular tortuous passage formed by the hard fibrous masses that surround the urethra in its bulbo-membranous portion. In some cases, especially where there have been perineal abscesses and numerous urinary fistulæ, the tortuous course of the strictured urethra is labyrinthian, and requires the utmost dexterity and painstaking manipulation to introduce an instrument into the bladder. Sometimes I have noticed an old sailor, or other person with such a stricture, after having frequently catheterized himself, introduce a flexible catheter in the most approved and orthodox manner, showing that he had acquired a knowledge of his own urethra which exceeds that, that could be acquired by the most expert

surgeon. And I will state now that flexible catheters and bougies are exceedingly useful for dilating strictures up to a certain calibre. They do not alarm a patient as a formidable looking steel sound, occasionally will, and they cause less distress in inexpert hands and besides the patient readily learns their use.

You will readily infer from what I have previously said, that gonorrhœa is a most frequent cause of stricture. In fact, seventy-five per cent of all strictures of the urethra are due to a previous gonorrhœa. There is a variety of stricture known as *traumatic* stricture, which is the most intractable of all to dilation, and usually for its proper treatment a surgical operation is required, consisting of an extensive division of the stricture externally in the perineum. This operation is known as perineal section, or external perineal urethrotomy, and of which we shall speak in another lecture. Gonorrhœa, as we have said, is the cause of seventy-five per cent of strictures in the urethra; but there are other causes which should not be overlooked. I believe that strong injections of nitrate of silver are a cause of stricture, especially when used in what is known as the *abortive* treatment of gonorrhœa. After cauterization of the deep urethra too carelessly or too often practiced for the cure of gleet or of spermatorrhœa, stricture may follow. The careless use of the urethral syringe, causing laceration of the delicate urethral mucous membrane may occasion coarctation. So may urethral chancres, urethral calculi, or injuries sustained by the penis during the existence of chordee. Traumatic stricture recognizes for its cause injury to the perineum, as from kicks, blows, falls astride of a carriage wheel, the hatchway of a ship, or falls astride of any sharp object. There is often a severe contusion of the perineum, and rupture of the urethra, with profuse urethral bleeding, and retention of urine, necessitating prompt attention.

I now call your attention to this flexible instrument which I hold in my hand, and which is of French make, and known as the *bougie a boule*, or bulbous bougie. It is acorn-shaped and of different sizes, and a most valuable instrument for detecting, locating and measuring strictures of the urethra. You may ordinarily recognize the presence of stricture with a common silver catheter, but you cannot obtain any accurate information of the stricture by such an examination. With the bulbous bougie of the larger size bulbs, you can detect strictures that otherwise would pass unperceived. Oil the instrument well with sweet oil, and if in winter see that the oil is warmed, selecting such a *bougie a boule* as will pretty nearly fill the meatus, and proceed to search for stricture. If there is stricture the bulb of the instrument will be arrested at the strictured part. The bulb may pass after meeting with a momentary obstruction and some little resistance. In withdrawing the instrument, it is arrested, the large end of the bulb being

caught by the distal orifice of the stricture. Having marked with the thumb, the distance that the *bougie a boule* has penetrated the urethra, when it is first arrested at the proximal orifice of the stricture, withdraw the bougie, and mark on a sheet of paper the length thus measured, and it will show the distance of this stricture from the meatus. Reintroduce the bougie; observe where the point of its bulb reaches the stricture, which is shown by a temporary arrest of the point; pass the instrument on into the urethra, and on withdrawing, mark where the instrument is arrested, and trace the length thus marked on the paper. You will thus be enabled to locate the stricture and measure its length accurately, and by the different sizes of bulbous bougies that may be used you can also determine the calibre of the stricture, besides obtaining other valuable information concerning the greater or lesser contractility of the stricture. The same method of exploration is repeated for other strictures seated deeper in the urethra. The size of the bulbous bougie used will determine you in the selection of the size of an instrument for dilating the stricture.

The instruments used in the treatment of stricture and its complications are exceedingly numerous. Some of them are solid or bulbous metallic instruments, as sounds and catheters, having rigid and inflexible curves of different shapes. Many of the instruments used for stricture are soft and flexible, and in such cases the curve of the instrument conforms to that of the urethra as it passes on into the bladder, and worms its way through the stricture. So that in the treatment of stricture by dilatation up to the calibre of about a number 9 of the English scale, soft and flexible straight instruments are quite sufficient, and the question of the proper urethral curve to be given to such an instrument is a matter of minor importance. For purposes of ordinary catheterism, and especially for purposes of dilatation beyond the calibre of a number 9 of the English scale, the curve of the catheter or sound is of much importance. The curves of urethral instruments have not been the subject of much accurate and recorded research. Up to the time of the publication of the Prize Essay on Stricture by Henry Thompson, little or no intelligent thought was directed to the consideration of a proper curve for urethral instruments. Thompson tells us that Mr. Briggs found, by careful and repeated anatomical measurements, that the distance from the sub-pubic arch to the point where the urethra perforates the anterior layer of the deep perineal fascia is seven-eighths of an inch to one inch and one eighth. This measurement I believe, from attentive observation on my part, to be correct. It would be accurate, in my opinion, to make the curve of most urethral instruments of a radius of only *one inch*, as this expresses the average between seven-eighths of an inch and one inch and one eighth. But I prefer to take the maximum of Mr. Brigg's measurements, and for convenience,

add about two millimeters to my radius, and call it thirty millimeters or one inch and the fifth of an inch. I formerly thought it necessary that the radius should be one and a fourth to one and a half inches, which would be less than that of Thompson's curve of a radius of an inch and five eighths. Henry Thompson devotes considerable attention to what has long been known as his curve for urethral instruments. The radius of Thompson's curve is, as just stated, one inch and five eighths of an inch, which you will see is in contrast with the anatomical measurements of Mr. Briggs, should we wish to avail ourselves of such data to establish a proper curve for urethral instruments. No one has attained, and most deservedly, to a higher position as an authority in diseases of the urinary organs than Henry Thompson. He has been copied and repeated again and again, and his dictum in the matter of urethral and bladder troubles passes unchallenged. It may be a subject, then, of some astonishment to attempt to disturb the accepted opinion regarding the curve which is known as Thompson's. But I shall endeavor to impress on you the advantage of using even shorter curves than those of the sounds constructed after Thompson's curve, and I shall try to make patent to you the reasons which influence me to entertain this opinion. Thompson proposes to adapt his curve to the least movable portion of the urethra, and he states that this least movable portion of the urethra is equal to about three-tenths of a circle, three and a quarter inches in diameter. He claims that an instrument in passing through a *healthy* urethra into the bladder must describe such a curve, and so he fixes the center of his supposed urethral circle, at about the center of the *symphysis pubis*. I will beg your attention to the fact, that the part of the urethra where it perforates the anterior layer of the deep perineal fascia, or sub-pubic fascia, is the most immovably fixed part of this canal. This sub-pubic fascia may be made a trifle more tense, or may be relaxed by the position of the patient to be catheterized. By elevating the shoulders this sub-pubic fascia is very slightly relaxed, thus somewhat facilitating sometimes catheterism of the bladder. If the bladder is very much distended by urine, this organ rises in the pelvis, and in drawing up the prostate, changes the curve of the prostatic part of the urethra. This is notably the case in hypertrophy of the prostate as I shall explain to you in a future lecture on that disease. On passing a good-sized catheter into the bladder no possible obstruction is met with in a healthy urethra until this sub-pubic fascia is reached, and then the point of the catheter should "hug" closely the roof of the urethra, and no matter if the catheter is not of the most approved curve it will enter and pass into the bladder. If you depress the point of the instrument near the bulbo-membranous portion of the urethra, the urethra at this part is distensible, and you will be quite sure

to fail in making the point pass the urethral opening in the anterior layer of the deep perineal fascia. If you should, as I will show you, take a heavy steel sound of short curve and gently pass it down the urethra and support it until the point of the sound is opposite the opening in the sub-pubic fascia, the instrument will glide of its own weight into the bladder.

It is possible occasionally to pass a straight instrument into the bladder without too much violence to the urethra. This only goes to show that the urethra, especially anterior to the sub-pubic fascia, is extremely movable, and that in a healthy urethra, if the instrument once passes the urethral opening, of this sub-pubic ligament or fascia, then it passes unobstructed to the bladder. So that the really fixed part of the urethra is confined to a less curve than three-tenths of a circle of three and one fourth inches in diameter. Indeed the only immovable part of the urethra is where it perforates the anterior layer of the deep perineal fascia. Now if we accept the measurements of Mr. Briggs of the distance, from the apex of the sub-pubic arch to the anterior layer of the deep perineal fascia, where it is perforated by the urethra, and makes a curve the radius of which shall measure this distance, we will in my opinion have a curve better adapted for urethral instruments. I propose to make this curve about equal to, or slightly in excess of the maximum of this measurement: *i. e.*, one and one-fifth of an inch, or more accurately thirty milimeters. I show you a wood-cut in this paper on stricture which I hand you and which was published in the *Medical Record*, of New York, in January, 1867, I at that time called attention to the measurements of Mr. Briggs as forming a more correct basis for a principle on which to construct a curve for urethral instruments than the one adopted by Henry Thompson. I made the mistake then to take a larger curve than the measurements justified, but the following kaolatype, Fig. 1, at A, shows a curve with a radius of thirty millimeters; *a* represents the apex of the sub-pubic arch, and *b* represents the point where the anterior layer of the deep perineal fascia is perforated by the urethra.

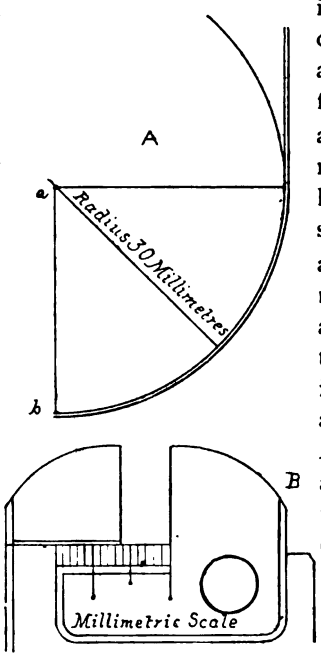

FIG. I.

A proper curve for urethral instruments.

a. Apex of sub-pubic arch and center of circle.

b. Represents point where urethra perforates anterior of deep perineal fascia.

Not less important than a proper curve for urethral instruments, is a

simple and standard scale, for the measurement of the size of sounds, bougies, and catheters.

There exists much confusion concerning the size of instruments used for dilating stricture: one author will speak of the English scale, another of the French; and Van Buren has attempted, but with little success, to introduce a scale based on the millimetric system, of an increase of half a millimeter to each number, and which he calls the American scale. Patriotic considerations should not influence us to accept this scale; and we may be satisfied without fear of compromising our loyalty to American surgical science, to accept the French scale, which such authors as Gross, Bumstead, Taylor, and others recognize as the most acceptable. Indeed, the French millimetric scale is known all over the civilized world, and an attempt to change it is productive of no advantage. I have long used a sound gauge, which I hand to you, at one end of which is a slide device marked in millimeters, and useful for measuring the size of sounds and catheters. A representation of the instrument is shown in a drawing which I also pass to you, at B in Figure 1. An inspection of the instrument or of the design will readily explain the use of this scale. Ten millimeters will measure the diameter of the number 30 of the French scale, known also as the *Charriere filiere*. Number 30 is the largest number and corresponds to about number 19 of the English scale. The French numbers increase by the addition of one-third of a millimeter to the diameter of each number; so that the number 5 of the *Charriere filiere*, corresponds to about number 1 of the English scale; and number 15 of the millimetric or French scale to about number 9 of the English scale. The accuracy of the millimetric measurements contrasts conspicuously with that of the English scale. A very little observation will discover to you, that the inequality in the same numbers, made by different makers of sounds and bougies according to the English scale, is more noticeable than the variable size and weight of a barley-corn, the old-time English standard of a grain weight. So that the makers of urethral instruments after the English scale, have no definately or accurately defined measurement, expressed even in the minute fractions of an inch, to serve as a guide. A number 1 or number 10 is copied from a previous number 1 or number 10; and it is not astonishing, therefore, if I tell you that this large steel sound which I hold in my hand is marked number 16 of the English scale, but actually corresponds to about a number 20 of the same scale. If you wish, for convenience, to carry in your minds the size of the French numbers, recollect that twenty-five millimeters make an inch: and that number 15 represents fifteen-thirds of millimeters, or five whole millimeters in diameter; and which would measure one-fifth of an inch, and correspond to about a number 9 of the English scale. I show you

here a number of steel sounds of short curve with conical points, and also a considerable variety of flexible catheters and sounds of French and English make. Steel sounds should always be made conical, and gum-elastic bougies and catheters, except these extremely fine filiform bougies, which I hand to you, should have a slight olive-shaped tip at their distal ends.

Gentlemen, at our next lecture, we will take up the very important and interesting subject of the treatment of stricture.

LECTURE IV. TREATMENT OF STRICTURE.

There is no infirmity so distressing, and which leads to more disastrous consequences, if neglected, than stricture of the urethra; and there is none that gives more satisfactory results, if properly treated. The essential condition required to effect the cure of stricture, is to restore the calibre of the contracted urethra to its normal size, and to maintain it thus. This is the object to be accomplished, and it can only be attained by dilatation of the stricture, whatever may be the means employed as accessory to dilatation. So dilatation, then, first and last, and always, is the proper remedial measure for the effective treatment of stricture.

The greater number of strictures are of large calibre, and often pass unrecognized; because an ordinary size catheter will pass into the bladder without much noticeable resistance, and the stream of urine is not appreciably smaller. But for the persistence of a gleety discharge, and occasional slight distress about the urethra, or a sensitive spot, perhaps, revealed by pressure along the urethra, neither the patient nor his medical attendant suspects anything wrong about the urinary organs. In such cases a number 15 (9 of the English scale) catheter passes readily; and I advise you to commence at once the use of the steel sound. The simple matter of the passage of a catheter or sound may be attended with reactionary troubles alarming to the patient, that may be taken during the passage of the instrument with a violent chill. This, however, when it does occur, is not until later, and is followed by some febrile movement. Before commencing to treat a stricture, examine your patient's urine; if it is acid, correct the acidity by appropriate alkaline drinks, as the citrate or acetate of potassa, largely diluted and flavored with the oil of lemon. Prescribe two drachms of the salt to the pint of water flavored with two drops of oil of lemon to be drank copiously during the day; or vichy water may be drunk freely—one or two glasses a day. If your patient presents any appearances of general ill health, it

will be well for you to test his urine for albumen, and subject a few drops of the night and morning urine to an attentive observation under the microscope, to see if you discover any epithelial, granular or waxy casts from the kidney. It is especially in proposed surgical operations on the urethra or bladder, that it is very important to determine if there be disease of the kidney before attempting any such operations; and even the passage of a sound or catheter may be followed by serious results. Recollect, that the exercise of an intelligent precaution before using urethral instruments may save your patient's life, or at least obviate unpleasant consequences both to him and to you.

The mortality from the treatment of stricture is very small, even after the rather formidable operation of perineal section; it is not more than two or three per cent, if I remember correctly; and the fatal result is almost invariably due to chronic disease of the kidney. Now suppose I should fail to give you this warning, and you start out to treat cases of stricture, and it should be your misfortune, as it very probably would, to have a number of cases recruited from among a class of men broken down in general health, with old strictures, and who have had repeatedly retention of urine, and who besides are given up to habits of drunkeness, just such men as swell our pauper population in this city, and are found in the mining camps. You may ask what are we to do in such cases? I will reply, that you should act with a full knowledge of the consequences even in the simple matter of passing a catheter, and exercise great caution. Give your patient a full dose (ten or fifteen grains) of quinine some hours before you attempt to catheterize him. Improve his general health by proper nourishment and tonic treatment, if such be possible; always require him to take a warm hip bath immediately after passing an instrument. To return to the subject of the treatment of strictures of large calibre, I will say that you should proceed methodically; examine for stricture with the bulbous bougies, and when you have found one to fit loosely the stricture, say a No. 15, 16 or 18, then select a steel conical sound, of the same number, and pass it gently into the bladder, avoiding all force; let the sound glide gently of its own weight. Let the instrument remain but a moment and then withdraw it with as much gentleness and care as you should in introducing it. I will observe, that when I speak of such and such numbers of sounds or bougies, without specifying, I refer to the French scale. It would be well for your patient to take warm hip baths, and to wear a proper fitting suspensory bandage during the treatment. There should be an interval of at least three days between the passage of the sound—five to eight days interval is at first safer. You must not attempt to increase the size of the numbers of the sounds too hastily. If your patient bears the passage of the sound well, you can

let it remain in the urethra three to five minutes each time. It may happen that the meatus is unnaturally contracted; if it should be, you will not sufficiently dilate the stricture, and thereby stop the gleet until you have cut the meatus. For that purpose I recommend to you Civiale's *bistourie cache*, which I show you (see Fig. 2). Some surgeons use a probe-pointed narrow bistoury; but I think you will like this instrument

FIG. 2.

better, because you can graduate the extent of the incision you wish to make. There is considerable bleeding after this little operation; but it is readily controlled. For this purpose, take a piece of patent lint, twist it into a firm cone about an inch and a half long, and that will fill the cut; saturate the cone in a weak solution of persulphate of iron, and plug the bleeding orifice. When the patient urinates some hours afterward, this little plug can be removed by dipping the penis in tepid water.

I will say to you that in the subsequent management of a case of stricture, you must instruct your patient in the use of the steel sound; and he will very soon learn, if he is intelligent, to pass it better than you can—he has the sensations of his own urethra to guide him, which are better than all the rules for passing sounds; and generally he is very careful not to hurt himself. After having fully dilated the stricture to the size of a No. 25 or 30 (French scale recollect), let him purchase for himself such a number, and pass the instrument at first every week, then every two weeks, and finally once a month; and tell him to exercise care with regard to his habits and not to forget to pass his sound regularly. He will find that this is not half as troublesome for him to do as to shave himself. If the treatment of all strictures were as easy as I have just described, it would be, to use the sailor's phrase, plain sailing. There are some very narrow and tight strictures, and there are some; which, dilate them as much, and as long as you please, in a few weeks or even days they contract as tightly as ever; these are called *resilient* strictures. You may be called to a man with retention of urine; you discover that he has had gonorrhœa once or twice, or oftener; that he is habitually subject to gleet, and possibly may have had retention once before or oftener. You attempt to catheterize him, and you will find that the smallest catheter will not pass; then you become perplexed, and you immediately, I suppose some of you would, think of the aspirator, an instrument of which I will speak to you later.

Now gentlemen, it is fortunate that we have such a valuable resource to tide us over an embarrasment, like a bad case of retention of urine.

Of course, one thing is evident, you must relieve the man of his retention of urine. You have no aspirator convenient, I will suppose, and you cannot possibly, after repeated efforts and recalling to mind as well as you can all that I am going to tell, pass the small size flexible catheter. Direct your patient to take a warm bath; to have it kept warm, and remain in it forty minutes or longer. The chances are that your patient will pass his water in the bath, and thus relieve you of much anxiety, and him of great distress. The next time you have a somewhat similar case, you think still of the warm bath and the aspirator as a last resource. Now let me tell you how to proceed, and if you fail, your resources still remain to you. Take a No. 5 catheter, millimetric scale, soft and flexible, of gum elastic, and avoiding the lacuna magna by keeping along the floor of the urethra near the meatus, pass the catheter gently, withdrawing a half-inch or more from time to time to keep it from engaging in any of the follicular openings of the urethra. When you have reached the stricture, or your instrument is arrested, withdraw it slightly and pass it to the right, then to the left, then superiorly, and then inferiorly, and you may very probably find the opening of the stricture, and the instrument will glide on into the bladder, and your success will be announced by the flow of a few drops and then a fine stream of urine. You may not have succeeded however; in which case, withdraw the instrument gently, and fill the urethra with three or four fine flexible bougies; if there is a false passage, you may obstruct this with one of the bougies and your catheter will pass on into the bladder. Sometimes you may use the twisted bougie, which is simply a fine, flexible instrument twisted at its distal extremity. This was much used at one time by Le Roy d' Etiolle, and in fact was known by his name. Gouley and Van Buren use a filiform whale-bone slightly twisted at its point, as a guide for the passage of urethral instruments, especially for what is known as tunnelled sounds. The most valuable of filiform instruments, in my opinion, is a fine, flexible, gum-elastic bougie much used by the French, and which screws on to a fine metallic catheter or steel guide which is

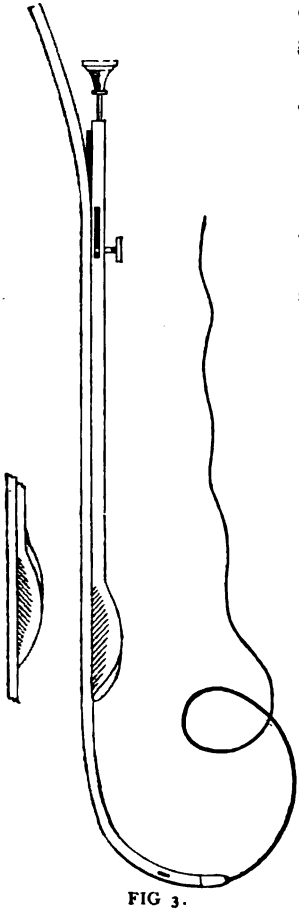

FIG 3.

furnished with a smooth, metallic tip, which screws on in place of the filiform instrument when this is not required. Suppose you have failed to pass a catheter, but you have succeeded in passing such a filiform bougie as just described; then you may screw on the filiform instrument, to a number 5 to 8 silver catheter, (millimetric scale) such as I now show you. (See figure 3.)

The catheter is separated from the urethrotome, but is provided with a groove into which securely slides the urethrotome. The catheter is furnished with a tip, which can be unscrewed, and the filiform instrument having been passed through the stricture, this instrument can be screwed to the catheter, and is passed into the bladder without trouble. The extremely fine and flexible bougie doubles up into the bladder after having served as a guide for the catheter. These filiform bougies are very much used for this purpose with other urethrotomes, such as Maisonneuves's or Bumstead's urethrotome and also with other instruments. My urethrotome has advantages over others, in my opinion, in having a catheter as a part of the instrument, and in having the knife thoroughly protected in its sheath, when not used in cutting, on introducing and withdrawing the urethrotome. I do not wish to anticipate what I have to say to you about the cutting of strictures; but since I have called attention to my own instrument, I will say, that, should the patient desire, and should it be thought proper, the cure of stricture can be very much hastened by cutting it with my urethrotome at the time of relieving the retention of urine.

It may be desirable, after relieving a case of retention of urine due to a tight stricture, to undertake what is known as *continuous dilatation*, and which is to leave a small catheter in the bladder secured to the penis by means of thread and adhesive plaster so that the catheter will not slip out. It is a fact established long ago, that a small catheter left in the bladder will dilate the stricture in the course of a few days, so that a much larger one can be inserted with the greatest facility. This leaving of catheters in the bladder, while much practiced in England and in continental Europe, is not resorted to so much in this country since Van Buren and Gouley have substituted for this practice the passage of a large sized steel sound every second or fourth day after the operations of internal and external urethrotomy. But the frequent habit of European surgeons of tying a catheter in the bladder after these operations, as well as after relieving a difficult case of retention, or for purposes of continuous dilatation, should receive your attentive consideration. Because the instrument is a source of great irritation to some patients whose bladder will not tolerate a catheter. There are others whose bladders are not much disturbed by the presence of a catheter. In nearly all cases there are incrustations of

the phosphates of the urine on the catheter which require its frequent and careful cleansing; in most cases the irritation is considerable, and by the pressure of the point may cause ulceration of the bladder. You may meet with a patient whose bladder is not much irritated by the continual presence of the catheter, and in such cases continuous dilatation may be most advantageously resorted to. When it is thought that a stricture is not resilient and the time or business of the patient will permit him to remain in bed a week or two with a catheter in his bladder; if he objects to the slow process of regular intermittent dilatation, and has an invincible dread of the cutting of his stricture, or the rupture of it by what is known as divulsion; then you might suggest continuous dilatation. Let me caution you that it is, unless in hospitals, pretty difficult to keep an American in bed two or three weeks with a catheter tied in his bladder, unless there is some very urgent necessity for it; he will submit better to a regular intermittent dilatation. For this purpose select a flexible bougie that will pass the stricture without being tightly grasped; wait three or four days and repass the same instrument, and withdrawing it pass the size just above it. When after about two months of treatment or sooner you have reached number 15, millimetric scale, substitute for the soft flexible bougies conical steel sounds.

As accessory to dilatation and for the purpose of rapidly giving relief from strictures, there are a number of methods that have been devised for the treatment of stricture. Sir Everard Home, in the latter part of the last century, wrote one of the most interesting works on stricture that had appeared up to that time or has appeared since. Home advocated the benefits of the destruction of the stricture by caustic. This mode of treatment gave rise to apparently good results at first, but was followed by the most intractible forms of coarctation of the urethra. Rebard, in France, tested the value of the nitrate of silver in the destruction of strictures. It is to be hoped that with Rebard ended the treatment of stricture with caustics. But some years ago Tripier, of Paris, and Dr. Neuman, of New York, used electrolysis in the dispersion of strictures of the urethra. I have had no experience with this mode of treatment; but about ten or twelve years ago I published the results of a case of stricture of the rectum that I had treated by electrolysis; the result was not satisfactory.

In strictures that do not readily yield to dilatation there are no methods that give such excellent results as urethrotomy and divulsion. The rule that some writers on stricture have attempted to establish with regard to these operations is; for strictures in the pendulous part of the urethra, cut; for those in the bulbo-membranous portion, divulse. I shall not attempt at any length to discuss the relative merits of these two

operations. By divulsion is meant the rupture of the stricture, and this is effected by means of a urethral instrument that is capable of being suddenly and forcibly expanded by the insertion of steel shafts that act as wedges. The most improved and best known of divulsors is that of Holt. There are others, but, gentlemen, the instruments invented for the treatment of stricture are so numerous that I despair of ever being well acquainted with all of them. In operating by divulsion on resilient strictures, the operation is said to be often a failure. In performing divulsions a requisite amount of force should be used, which is considerable, to "crack" the stricture; that is completely rupture it. Unless such force be exerted in a timely manner the stricture is only partially ruptured, the operation is a failure and must be tried over again. In withdrawing the divulsor from the urethra much care must be exercised not to pinch and tear the mucous membrane and give rise to a traumatic stricture, in addition to the one treated by divulsion. Strictures situated in the anterior part of the urethra must be cut, as they are not at all or with difficulty amenable to treatment by divulsion. The dread of hæmorrhage after cutting, in the deep portion of the urethra, is given as a reason to prefer divulsion to internal urethrotomy. This objection is not valid; there is very little hæmorrhage when internal urethrotomy of the bulbo-membranous portion of the urethra is performed properly and with a proper kind of urethrotome. The instrument of Civiale is in skillful hands one of the best urethrotomes that can be used; but in unskillful or careless hands, and with the blade *directed towards the floor* of the bulbo-membranous portion of the urethra, and pressing too strongly against this part, there is every chance of cutting too deeply. This instrument in the hands of Civiale, of whom it was faceciously said by students that, *tout son talent est dans ses doigts*, was handled by him and by some others with great advantage. (See Civiale's instrument, Figure 4.)

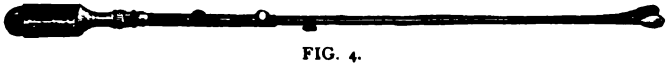

FIG. 4.

The bulb on the end of this instrument requires that the stricture should be previously dilated sufficiently to admit this part. I show you this instrument which I think very highly of; it is one that I purchased of Luer, in Paris, a few years ago. This is Maisonneuve's urethrotome, you will observe that the groove runs to the end of the steel guide, which is an objection. However you will notice what a round, smooth knob the apex of the blade has. You may pull this instrument through the urethra without fear of cutting any but a constricted portion. There is one precaution to be observed in the use of this urethrotome, which is to see

that the knife glides securely in the groove made in the steel guide for it. And if you operate for stricture or do any other operation in surgery; know well, in the first place, what you are going to do; keep cool and keep your wits about you, and do not force the blade of this urethrotome down forcibly into the urethra as you would the wedge of Holt's divulsor; and possibly get the blade off from the track, and run it into the the parts outside the urethra, which happened in a case mentioned by Bumstead. You will notice that the groove of Maisonneuve's urethrotome as well as that of mine and of Bumstead's modification of Maisonneuve's is placed so that the knife will cut the stricture through the *roof* of the urethra. There is an important anatomical reason for this. Dr. Robt. F. Weir, of New York, made some interesting preparations of the frozen penis with gelatine injected in the spongy tissue of the three corpora, showing sections of this organ at different parts including that of the bulb. These sections show that there is comparatively little of the spongy tissue of the corpus spongiosum *above* the roof of the urethra and less at the bulb than elsewhere. If you will recollect the comparatively non-vascular character of the inodular tissue of a stricture, you will perceive there is little apprehension for hæmorrhage; and now if you add to this that the cut should be made upwards instead of downwards, as is usually done, then the fear of hæmorrhage vanishes.

FIG. 5.

Hæmorrhage of the urethra may be stopped in the pendulous portion by compression, and in the deep by passing into the urethra a metallic tube, (see Fig. 5) like that of Otis, and having twisted securely a piece of cotton as a fine probe; saturate the cotton with a solution of persulphate of iron and apply directly to the bleeding part. Dampen the cotton lightly at first and twist it securely so it cannot come off the probe. However, you need not fear any hæmorrhage if you will follow the instructions which I have given. This instrument will answer for medicating patches of urethral inflammation in gleet.

There are certain complications of stricture, which make the opening of the urethra from the exterior through the perineum, preferable to internal urethrotomy. There are perineal abscesses which form as the result of urinary infiltration following retention; and fistulous tracts traverse the perineum in irregular, sinuous courses, and the whole perineum is one indurated mass. A steel guide, such as this one of Symes, is introduced

and the stricture divided on the groove of the staff. You should cut entirely through the strictured part, so as to divide the urethra a little beyond the stricture, cutting slightly into the healthy urethra. Should you fail to observe this precaution, you may find that some of the stricture tissue not having been divided, the stricture will return rapidly. The same use of the steel sound is required after this operation as after internal urethrotomy. You need not leave a catheter in the bladder after the operation. Introduce a steel sound every few days to keep the urethra patent. On the second or third day, by the swelling of the cut edges, the artificial opening closes temporarily so that the patient makes a full stream of water in the natural way. The perineal wound heals in three or four weeks. The same operation is required for traumatic stricture, and may be for retention of urine when you fail to catheterize the bladder; and these operations must be performed without a guide. The assistant passes a steel sound down to the seat of stricture in the deep urethra; you cut previously with the urethrotome any stricture in the pendulous part of the urethra, that may oppose the passage of the sound. The staff or sound being held securely in the median line, with the point pressing against the stricture, you should cut carefully down through the urethra so as to expose the sound to view. You may find the strictured orifice of the urethra without difficulty, or may have to hunt for it an hour. In conclusion, I will say that in operating on the urethra, take every precaution to guard your patient against harm. Operate in a warm, comfortable room; take care in cases where you think it required, to give 10 to 15 grains of quinine a few hours before the operation. See that the provision is made for plenty of blankets, and that bottles of hot water, hot bricks—or better still, a rubber bag to be filled with hot water, be at hand to be used in case of chill. If necessary, give the patient an opiate suppository of two grains of opium, giving it in a small mass to be inserted by means of the hard-rubber suppository tube.

INFLAMMATION.

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What is meant when we use the time-honored word inflammation? Some writers define it as a morbid process or alteration, which is accompanied by pain, heat, redness, swelling and a general disturbance of the function of the part affected. But all these changes may occur without inflammation.

Inflammation, I think, is best defined as a series of changes which occur in living tissues, when injured either by a physical or chemical irritating agent, provided the injury be insufficient to destroy at once, the structural vitality of the part attacked.

The theories advanced as to the cause of inflammation have been many. The *first* and *old theory* was, that the inflammation was due to an irritation in the blood, which might be supplied externally or internally, directly or indirectly, but always produced primarily through the blood, resulting in an increased flow of blood to the part.

The *second theory* was a primary paralysis of the vaso-motor nerves of the part.

The *third* or *Virchow's theory* was the same irritation through the blood as in the first, which, however, produced first a proliferation of the connective tissue corpuscles as the first change, and following this increased cell growth, an increased flow of blood to the part.

Writers and observers, however, are not uniformally united as to the exact mode of production and definition, but the one here given is generally accepted.

The exciting injury may be either direct or indirect, extrinsic or intrinsic. Direct either by a mechanical or chemical injury, or subcutaneously through the blood or lymph channels; indirect, when an internal organ becomes inflamed after exposure to cold. So called idiopathic diseases, which however, more correctly speaking, are infective, the cause being internal and imperceptiable. In all cases some injury must occur to produce the inflammatory process.

The most accurate scientific investigations relating to inflammation have been carried on of late years by *Professors Cohnheim*, *Stricker* and *Burdon Sanderson*, upon the lower animals. The effects which follow upon injurious irritation of the tissues they find to be: *First*, changes in the circulation and blood vessels: *Second*, exudation of the liquor sanguinis and a migration of the white blood corpuscles with diapedesis of the red: *Third*, alterations in the nutrition of the inflamed tissues.

The second series of changes alone has been considered the only one essential to inflammation; but if changes in the circulation and blood vessels are necessary to the migration, the first as well as the second set of changes are essential. Undoubtedly the first are essential and sometimes constitute the only inflammatory danger, death ensuing before the second series are perfected; otherwise it will be hard to account for death in certain cases, for instance, acute meningeal inflammations.

Therefore, the phenomena which every complete definition of inflammation has to account for are: *First*, acute hyperæmia or determination: *Second*, stagnation of blood or stasis: *Third*, an escape of liquor sanguinis and the corpuscular constituents of the blood: *Fourth*, changes in the tissues, both in the direction of an overgrowth or in the direction of degeneration or loss of substance: *Fifth*, nervous phenomena as pain and hyperæsthesia.

I. CHANGES IN THE CIRCULATION AND BLOOD VESSELS.

The *changes* in the *blood* and *blood vessels* result in increased vascularity, determination or active congestion. Determination is accompanied by pain, heat and redness, but is not necessarily inflammatory, although it may be the first stage of inflammation, or it may be entirely independent of any inflammatory process, as seen in the liver after digestion, in the mammary gland prior to and during lactation.

The changes in the blood refer rather to the current than to chemical changes. These changes are seen under the microscope when inflammation has been excited in the lower animals.

The effect upon the blood vessels is first a transient contraction followed by progressive dilatation, affecting first the venous, secondly the arterial, and lastly the intermediate capillaries. The dilatation gradually progresses for about twelve hours, accompanied by lengthening and tortuosity. With simple dilatation of firm-walled vessels, more blood will flow through the part, but in inflammation a different condition is observed. For when the vessel becomes fully dilated, the current becomes slower, oscillates, and finally becomes stagnant, conditions essential to inflammation. As the blood current becomes slower, the white blood corpuscles accumu-

late in the venous, the red in the arterial and intermediate capillaries. The white adhere to the wall of the vessel, and the red keep in the center of the stream. Under the microscope when tissues have been irritated to produce inflammation you will see a gradual dilatation of the capillary vessels, increased current, slowing of the current, oscillation, and finally at the end of twelve hours stagnation.

The white corpuscles will be found hugging the wall and most abundant upon venous side, the red in the center of the stream and on the arterial side. In the center of the inflamed zone when the stasis is complete the red corpuscles are so closely pushed together that it becomes almost impossible to trace their outlines. When the stagnation is complete there is no migration, but around the border where the blood current is increased in rapidity the migration of the corpuscles is quite active.

II. THE EXUDATION OF LIQUOR SANGUINIS AND MIGRATION OF BLOOD CORPUSCLES.

The migration of the blood corpuscles—leucocytes—through the walls of the blood vessels was first incompletely described by Dr. W. Addison, of this country, in 1842, who stated that the corpuscles adhered to the walls of the blood vessel and passed through. In 1846 Dr. Augustus Waller, of London, described the same phenomenon more fully, and both these observers concluded that the escaped blood corpuscles became pus corpuscles. These observations, however, were soon forgotten, and it was not until the publication of Professor Cohnheim's researches and observations of the migratory corpuscles that emigration became an important factor in inflammation.

This emigration of the corpuscles can be observed in the mesentery of a curarized frog. The stasis and the position occupied by the various elements of the blood we have fully considered. The white corpuscles immediately adjacent to the walls may be seen gradually sinking into the interspaces, to pass through and into the surrounding tissue. As the progress through the wall of the vessel is slow, you can see each step; first a small button-shaped elevation springing from the outer wall of the blood vessel; these little elevations gradually increase until they become pear-shaped bodies which cling to the wall by their small extremity. Ultimately the small pedicle of protoplasm gives way, then the passage is completed and the corpuscle has made its escape from the vessel. The red corpuscles also escape, which is called diapedesis. The white escape through the venous capillaries, the red from the arterial and intermediate. After escaping from the blood vessels some think their further course is in the lymphatic channels, others that it is entirely independent of the lymphatics.

The exuded liquor sanguinis which occurs in connection with the migrating corpuscles also helps to form the inflammatory effusion; but differs from the fluid that transudes from simple mechanical pressure. That from mechanical pressure is composed of water, a slight amount of salts, and under rare circumstances contains a trace of albumen, while the inflammatory effusion contains a large proportion of albumen, fibrinogenous substances, chlorides, phosphates and carbonates, a proportion which appears to be increased with the intensity of the inflammation.

Therefore at the seat of the inflammatory process all these ingredients are increased at the expense of the circulating blood. This is especially so if the inflammatory process extends over a large area. The most marked character of an inflammatory effusion is the large number of cell elements which it contains, and they should be regarded as a direct product. At the present time they are never thought to be generated spontaneously from the effused fluid, although such a belief has been formerly entertained. The quantity and nature of the inflammatory exudation will vary with the tissue involved and the severity of the inflammatory process. In non-vascular structures, as the cartilages and cornea, exudation can only occur to a limited extent, and then must come from the vessels of the neighboring tissue, for they are devoid of blood vessels. Again, in dense organs as the liver or kidneys owing to the compactness of their structure a large amount of effusion is impossible, and the little that does occur is so intermingled with the structural elements as to be imperceptible as a new and distinct material. In reference to active and passive congestion these organs are decidedly distensible, but when they are the seat of inflammation we may justly regard them as compact. By distending the blood vessels of the liver its size may be increased, but the close relation between the hepatic cell elements and the blood vessels prevents extensive inflammatory exudation from the blood vessels. In the lungs the reverse is true in regard to inflammatory effusions owing to their lax structure and the air spaces forming the boundary of the vessels on one side. This fact is well demonstrated in lobar, or croupous pneumonia. In the kidneys the exudation escapes into uriniferous tubules, and appears in the urine giving rise to albuminuria.

The inflammatory effusion is most abundant and visible in loose structures when the blood vessels have little support as in the lungs, areolar plains, and in the mucous and serous surfaces.

III. ALTERATION IN THE NUTRITION OF THE INFLAMED TISSUE.

Varying with the part affected there is, however, always an increased nutritive activity on the part of the cellular elements. These changes have been principally ascertained by investigations upon the lower animals,

for in man primary changes in inflammation cannot be investigated with accuracy. The first change noticed is an increased nutrition, which is evinced by increased activity of these elements, which normally exhibit active movements, as the amœboid cell of the connective tissue and of the cornea. Cells which normally undergo no marked change may become active, sending out processes, and undergo a variety of changes in shape. This increased activity and variation in shape is usually accompanied by a growth of the protoplasm, and a division of the cell mass, thus producing new cells. In many cases as the protoplasm increases in bulk it loses its former transparency, becoming cloudy or even granular, so as frequently to obscure the nucleus. This condition is known as cloudy swelling, and is especially well-marked in the epithelium of the kidney in certain acute diseases, The cell elements may become markedly granular or filled with fat droplets, then we have the condition known as either fatty or granular degeneration.

The changes vary in different tissues and in different elements of the same tissue. In tissues which maintain themselves by multiplication, increased activity is very readily induced by inflammation and often by simple irritation alone. This rapid proliferation is especially well marked in epithelial elements of mucous membranes and the epidermis, while the opposite is observed in the cartilages where the only visible change is slight alteration in size and form. In the higher tissues the stability of cell elements reaches the maximum until in nerve cells no increased nutritive activity has yet been demonstrated. The different cells in the same tissue exhibit different degrees of stability. In the connective tissue and the cornea the stability is at the maximum. Old cells are less susceptible to change than young and newly formed. The earliest changes are those of cell growth and proliferation (increased nutrition), the subsequent changes, impaired nutrition, degeneration and death.

With the increased nutrition there may be a development of new and permanent tissue, which is always inferior in organization to that of the original structure. As the cells are imperfectly developed, they in turn are more likely to undergo retrogressive changes than to form new elements.

If the inflammation be very severe, stasis wide-spread, gangrene will of necessity be the ultimate result on account of the complete arrest of nutrition. The character of the cellular development varies also with the intensity; viz, the more intense the inflammation the more abortive the cells with little or no tendency to form new and permanent tissue.

In connective tissue substance, or, more properly speaking, connective substance group, this cell growth is accompanied by a tendency to softening; the fibers of the fibrillated connective tissue become succulent, less

distinct, and finally disappear; in cartilage the matrix softens and liquefies; in bone the lime salts are removed, the lamina disappear and the osseous structures become converted into medullary tissue.

Although inflammation is commonly spoken of as one of destruction and always followed by a disintegration of the affected part, we have found that it is both nutritive and formative as well as destructive, the overgrowth or degeneration being governed entirely by the intensity of the inflammation. It should also be remembered that this overgrowth is nature's great method of repair, but that the new-formed tissue is always inferior to the original from which it is formed and replaces. With this repair, however, there is frequently a constant molecular death of the tissues from which the new elements are being formed, but the overgrowth being in the supremacy it completely crowds out the degeneration process and ultimately repairs the damage. As repair is so frequently met with in surgical practice, this point should be clearly understood from the first, that inflammation is both *reparative* and *destructive*, governed by the intensity of the process. They often are simultaneous.

Inflammatory Exudation.—They may be divided into serous, mucous, fibrinous, hemorrhagic, or a combination of two or more, which go to form the so-called croupous, diphtheritic, etc., exudations of medical pathology.

The fibrinous and hemorrhagic, however, are the two of special surgical importance. In the fibrinous or more correctly speaking the fibro-plastic it is not an escape of the fibrin as we commonly see it, but of two pre-existing substances of the blood, said to be limited by a third element by some called "fibrin ferment," thus forming the delicate reticulated networks known as fibrin. The tendency is for this fibro-plastic exudation to undergo degeneration, but it may become organized into new tissue. This fibro-plastic exudation is an important factor in the repair of wounds, forming the bond of union between wounds, the limiting wall of the acute abscess, the line of demarcation between all living and dead tissues, and is the base from which all reparative actions spring. All destructive processes must be arrested by this fibro-plastic before repair can commence.

The hemorrhagic exudation results from the escape of a large amount of blood in which the red corpuscles predominate.

Inflammatory products.—They are: 1, pus; 2, granulation tissue; 3, new and cicatritial tissue; 4, the development of new blood vessels. The blood vessels are developed both in the granulation tissue and new formed cicatritial tissue. By some degeneration is classed as a product, but it seems more appropriate to consider it among the pathological changes and not a distinct product. This product will be considered further on under distinct headings, as suppuration and repair.

Symptoms, may be classed under five distinct headings:

1. Alteration in color.—Redness.
2. Alteration in size.—Swelling.
3. Modified sensation.—Pain.
4. Increased temperature.—Heat.
5. Modified function.—Increased or decreased secretions, hypertrophy or degeneration.

I. *Redness*—is invariably one of the first and most striking local signs of inflammation, excepting in the non-vascular structures as the cornea and cartilages. In ordinary forms of inflammation the color is deepest at the center, from which it gradually shades off to that of the surrounding healthy part. In erysipelatous inflammations the reverse is true, the outer border being deep in color and the center pale. This is a good diagnostic point between the two forms of inflammation. The color at first is due to the accumulation of the red blood corpuscles in the dilated vessels, but later on to a separation and deposition of some of the blood pigment. The local color may vary from a bright red to dull purple; the tint is dependent upon the constitution and the intensity of the congestion. A dull color and great local congestion is indicative of a feebly acting heart, and such patients are liable to slip through the surgeon's hands unless great care and watchfulness be exercised. Here stimulants are decidedly called for. With a bright red color the congestion is not so great and indicates general increased activity of the constitution. Here the cardiac sedatives are called for.

II. *Swelling.*—At first the increased size is due to the distended blood vessels, later to the exudations. When the tissues are lax the swelling is great, but in the compact tissues very little. With a mild inflammation there is very little swelling, but if intense it will be considerable. If chronic, permanent enlargement may be the ultimate result.

III. *Pain.*—This is one of the most marked and constant symptoms, being governed by the locality and intensity of the inflammation. Pain is least in the areolar structures, greatest in the compact and solid.

Pain, however, does not always indicate the extent or the severity of the action, but more frequently is in the increase ratio. Movements or pressure always increase the pain. The character also varies with the seat of the pain. If located in a mucous membrane it is either gritty, itching or burning; if in a serous membrane lancinating or stabbing; if in a bone aching or boring, most aggravating at night or just before a storm; if in the testicle sickening giving rise to faintness and nausea.

Pain is one of the best diagnostic symptoms, and may be brought out by pressure, squeezing or bringing two contiguous surfaces together, as the articular ends of bones in joints. Pain may be either localized

or extensively radiated, back along the course of nerves, even when the terminal ends are only slightly involved. The pain is caused by increased sensibility and increased pressure, produced by the distended vessels and the exudations.

IV. *Heat.*—The temperature is elevated, but not as much as the patient is led to think, the nerves measuring sensation and not actual heat; the local heat is due to congestion and possibly chemical and physiological changes.

V. *Modified Function.*—First the increased nutritive activity of the cellular elements probably caused by the stimulus retained in the exuded liquor sanguinis. The secretions are first arrested probably by the sudden congestive and interrupted nerve action. This arrest of secretion, however, is only temporary, being speedily followed, first by an increase in the quantity, which is also speedily followed by a change in the character. With the chronic inflammations the secretions may be altered in character and permanently increased or decreased in quantity. All the elements of the body may perform more or less work, as the result of an inflammatory process. By this, I think all close observers will readily appreciate, that the inflammatory processes of nature are both formative and distructive, causing both increase and decrease of tissue, also increase and decrease of the working powers.

ESERINE IN THE TREATMENT OF CORNEAL ULCER.

By Edmund C. Rivers, M. D.,

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It is only of recent years, that the introduction of calabar bean into our pharmacopœa has placed it into the hands of ophthalmological surgeons, to contract the pupil at will by the local application of drugs. Still more recently, the isolation of its alkaloids, physostigmine and eserine has given us powerful therapeutical remedies. Physostigmine was first used in the form of delicate wafers, introduced beneath the lid.

This was rather awkward and its usefulness rather limited. In eserine, however, we have a remedy easy of application and capable of great good. Its beneficial effects in glaucoma, and apparently curative power in some cases, occupied for several years, the attention of ophthalmologists almost to the exclusion of its other therapeutical uses, when the attention of specialists was more particularly called to its good effect in other diseases, by the experiments of Dr. Williams, of Boston,

and by the researches of a few eminent German physicians. It is still, however, known to the general practitioner only as a remedy in glaucoma.

In the case of eserine, as with few other remedies, nearly, if not all, of its good effects in diseased eyes, can be explained from its physiological actions. If a few drops of a solution of eserine, of from ii to iv grs. to the ounce, be instilled into a normal eye, in from 15 to 30 minutes the pupil becomes contracted to nearly a pin's point. Spasm of the ciliary muscle occurs, giving rise to extreme near-sightedness, and consequently blurred vision. The far point being reduced to about six inches from the eye. The iris is said to become congested. The intra-ocular tension is decidedly diminished. There is a peculiar drawing sensation about the eye, similar to the sensation produced by the application of a cupping glass to the integument. Pain over the brow, or around the eye, which varies from merely a feeling of uneasiness to severe frontal headache, is a constant symptom, but is seldom produced by its use in a diseased eye. All these symptoms pass away in a few hours, except the contraction of the pupil which continues for several days before resuming its normal appearance and action.

Now in corneal ulceration, our greatest danger is from extension of the disease and perforation of the cornea, from the pressure from within; the result of which is that most commonly the iris is brought forward against the cornea, and becomes adherent at its inner surface, at the point of ulceration, forming what is called anterior synechia, which leaves an imperfect and dangerous eye. The patient's greatest annoyance is from the extreme photophobia and pain in and around the eye. This photophobia is owing to the rays of light passing through the pupil and falling upon the retina. As there exists a very intimate nervous connection between the cornea, iris and retina, by which the affections of any one of these three structures are made apparent by certain reflex symptoms having their seat in the other two.

As we have seen, eserine has a positive effect in decreasing the tension of the eye, and of contracting the pupil until it is only about one millimeter in diameter; upon these two physiological actions depends its great influence over corneal ulcers. The first, acts by taking away some of the pressure upon the diseased cornea, and preventing more or less the danger of perforation; acting in the same manner as an iridectomy when employed in the same disease. The second, by contracting the pupil shutting out almost entirely the rays of light, which would pass through a normal pupil, or one dilated by a solution of atropine and infringing upon the retina, produce intense photophobia, thus affording the patient almost immediate relief from his most annoying symptom.

The strain upon the weakened layers of the cornea being removed, the diseased tissue is put in a position of rest, as it were; the most favorable condition possible for the reparative processes to begin, and for a successful treatment of the case.

Not only is the employment of eserine in these troubles indicated by theory, but in practice we find its claims upon our attention equally as strong. In the very large out-door department of the Presbyterian Eye and Ear Hospital, in Baltimore, for the past three years I have had a very extensive experience in its use, and prefer it, especially in deep corneal ulcers, to any other treatment in vogue. No less an authority than Weber, says, in speaking of the treatment of corneal ulceration: "The therapeutic value of the means usually employed such as compression bandages, warm fomentations, paracentesis, iridectomy, etc., is, with few exceptions, insignificant in comparison with the great efficacy of calabar."

Unfortunately, it is almost universally thought that atropia is the proper remedy in all corneal troubles, to which rule there are no exceptions; and the practitioner is often sorely puzzled to account for the persistency of the photophobia, although he has employed most faithfully "the great eye anæsthetic" atropia. If he would for a moment consider the effects upon the eye of the instillation of this drug, he would soon perceive his mistake. Atropia not only increases the intra-ocular pressure, and also the danger of perforation, but dilates the pupil far more widely than we can possibly do by any other means; thus admitting a stream of light to the already over sensitive retina, and increasing the very symptoms he is trying to alleviate. I would not advise the indiscriminate use of eserine. To act effectually, it must be applied with some care. In all cases when there is, or we have reason to think there will be an extension of the inflammation to the iris, eserine must be most religiously avoided. For by contracting the pupil, it brings a larger area of iris in contact with the anterior surface of the lens, and in case of iritis, a plastic deposit will be thrown out, tying the iris to the lens capsule (Posterior Synechia), causing irreparable mischief; for even if we succeed in breaking up the adhesion, still the deposits remain upon the lens capsule, giving rise to very imperfect vision. In all such cases, atropia should be used; for by dilating the pupil, all contact between the iris and lens is prevented, and no adhesion can possibly be formed as long as the pupil is kept fully dilated.

In the employment of eserine, I use a solution of ii to iv grs. of the neutral sulphate of eserine, and of this instill one or two drops in the eye, every morning. This will keep up a contraction of the pupil during the day, when of course the patient suffers mostly from his photophobia. If necessary, it may be repeated at night without doing any harm.

TERATOLOGY—ACEPHALIC MONSTERS.

By W. E. Wilson, M. D., Denver.

The word teratology is now very generally applied to the history and science of monstrosities. There are an almost endless variety of these monsters, and by this word we mean an infant that presents at birth serious malformations of some portion of the body, not including such common anomalies as hair lip or club foot. All such malformations are included and described in the science of teratology. Much thought has been devoted to this subject and more than one volume has been written, with many illustrations, by earnest scientific men, that the superstition of former ages might be eradicated from the minds of the people and that they might thereby be enabled to "justify the ways of God to man."

From the fifteenth to the beginning of the present century many references were made to this class of beings, and minute descriptions were given of their malformations, and many efforts were made to explain their causes. As far back as the middle of the sixteenth century Conrad Lycosthenes wrote a book, with many wood engravings, giving as he claimed all the cases where intra-uterine deformities had occurred down to his day. He looked upon these prodigies as foretelling calamities to come, either of war, famine or flood. For hundreds of years it was claimed that the existence of these anomalies was the work of the devil, and that to allow them to live, where they gave signs of vitality, was an encouragement to his Satanic majesty, and gave him hope of becoming himself extracted from hell where Milton portrays him as ruling. It is doubtless to this superstition that Milton refers in the couplet:

> "So many terrors, voices, *prodigies*,
> May warn thee; as a sure foregoing sign."

Under the old Greek and Roman laws these monsters, where they gave any signs of life, were at once destroyed, and as late as the seventeenth century they were either killed or hid from human gaze. Had the several double monsters, like the Hungarian sisters, or the Carolina sisters, Christina and Millie, or Chang and Eng, the celebrated Siamese twins, come into the world at an earlier date, they would have been slaughtered under inexorable laws, that the anger of the offended gods might be appeased.

It was not until the eighteenth century that any careful investigation of the anatomical peculiarities of these subjects was made by competent scientific men. It is now understood that these imperfect formations are usually the result of simple arrest of development, or of a want of those conditions of perfection in the original generative matter necessary to perfect development

What the arrest of development may depend on, in any given case, or how it has acted, is still involved in obscurity. Among the causes enumerated are; mechanical injury to the mother, such as falls or blows; disease of the uterus, placenta, umbilical cord; inflammation or congestion of that portion of the child involved, at some early period of utero-gestation. There is no doubt in the minds of many intelligent physicians, that unfavorable surroundings for the mother, prolonged distress of mind or great bodily suffering may result in malformations of the child. Maternal impressions, as generally understood, may not be the real mode by which the child is affected, for it is true that there is no direct nervous connection betweeen mother and child, but is certainly within the reach of possibillity, that by affecting powerfully the mind of the mother, for a protracted time, the process of nutrition through abnormal nervous action, may affect the child and would doubtless do so as a natural sequence.

But it is said, that "corresponding malformations in every respect identical in character, occur among the lower order of animals." And, furthermore, it is said that we find "analagous malformations in the vegetable kingdom, developments which apparently result from defective or excessive formative power."

This may be all true, and the malformation in the lower order of animals doubtless depends on some one of the causes enumerated heretofore, such as violence or inflammation; but in addition to, and above all this, the mind of the mother affects the child *in utero* indirectly through the processes of nutrition. Abundant evidence of this is found in medical literature. In this connection the statistics of Baron Laroy will be called to mind, who states that after the siege of London in 1793, of ninety-two children born in the district, soon after, sixteen died at the moment of birth; thirty-three died within ten months, eight became idiotic, and two were born with several of their bones broken.

In the book on the science of teratology written by Geofrey Saint Hilaire and his son Isadore, and in the production of Vrolik in the Cyclopædia of Anatomy and Physiology, complete disquisitions on all forms of monstrosities may be found. A number of other authors including the late Professor Simpson, of Edinburgh, have written elaborately on this subject, the latter author dwelling more particularly on that part

of the subject relating to intra-uterine pathology. From the multitudinous variety of malformations presented for the study of the embryologist, I desire to write more particularly of acephalic or anencephalic children. Having had three cases of this variety of monstrosities in my private practice in the last four years, I will here report them, and do so as briefly as perspicuity will allow.

Case No. 1—Mrs. H., a resident of Denver, came from one of the Eastern States four years ago, being then about seven months pregnant. When she was four and a half months *enciente*, she lost her only child, a beautiful girl seven years of age, with diphtheria. This caused excessive nervous prostration and spasms in the mother, from which condition she was saved only by skillful treatment and persistent effort on the part of her attendants. Being of an excessively nervous temperament, she did not wholly rally from her bereavement, but brooded over it to an alarming extent up to the time of her confinement here, two months after her arrival. There was nothing unusual in her labor except a difficulty in making out the presentation, owing to the acephalous character of the child, which was well developed except the head. The brain was absent and the membranes and cranium in an imperfect state of development. The parietal, frontal and occipital bones were absent, except at their lower portions at the base of the brain. These bones at the base of the brain, as is usual in such cases, were unusually thick, as if to compensate for the loss above.

The eyes were prominent, and there appeared to be *no* neck, the base of the cranium being set directly on the vertebral column, on a level with the shoulders, and the ears on either side resting almost, if not quite, on the shoulders. Where the vault of the cranium should have been was a pulpy vascular tumor, protruding from the edges of the bones in their entire circumference, and being almost as full and rounded as would have been the skull itself, had it been perfect. This tumor feeling much like the placenta, was the cause, early in labor, of difficulty and doubt in regard to the presentation. No examination of the contents of the tumor was alllowed.

Case No. 2—Mrs. S. of Denver, was delivered May 7th, 1881, after an ordinary labor, as regards severity and duration of a dead acephalus female child, similar in all important particulars to the child in the first case mentioned, except that there was no tumor, the vault of the cranium being absent, leaving the base in all its irregularities. Her surroundings had not been good during her pregnancy. She was the wife of a butcher, his shop being in the front of an unpretentious one-story frame building, his wife living in an adjoining room, which was imperfectly separated from the meat shop. In this same building, and separated only by an upright

board partition was another family, whose head, the father and husband, was a drunken brawling wife-beater who frequently made use of the privilege granted him by intoxication, to engage in the delectable employment of thrashing his better half. This drunkard had an idiotic girl child, five or six years of age, who was exceedingly troublesome and irrepressible in her behavior among the neighbors. The mother of this acephalus child, as might have been expected under the circumstances, was frail physically and notably misanthropic. The child was exhibited a day or two after its birth, to the members of the Denver Medical Society, and was considered a rare specimen and worthy of careful preservation, but unfortunately, a few weeks after its birth, though an attempt had been made to preserve it in alchohol, it was found to be in a state of decomposition and was buried. The mother did not regain her wonted health, and though up and around after the usual confinement, was pale and anæmic until the end of about two months, when she was taken down with typhoid fever and died in ten days. Her surrounding, all will admit, were most unfavorable, both for fœtal development and her own continued existence. Living in an average meat market, day and night, where scraps of meat in all stages of decomposition constantly abound, is like living in a perpetual charnal house, and typhoid fever in such surroundings is the living embodiment of effect following cause.

Case No. 3—Saw Mrs. F. a resident of Denver, the night of November 29, 1881. She was delivered of a dead child at full term last January, and at the time of my seeing her was again in labor at full term. After a couple of hours of ordinary labor pains, she was delivered of a dead acephalus child, the front view of which is represented in Fig. 1, accompanying this article. This Fig. also represents very clearly the physiognomy of the children in cases Nos. 1 and 2. The rear view of the child in this last case is also given in Fig. 2, of this article as it represents continued defect down the spinal column, in the absence of the skin which was not present in either one of the other two cases reported. It is, however, a defect occasionally noticed in this class of monstrosities. The mother of this child, during her term of utero-gestation lived on an eminence in the eastern portion of the city in a one-story frame house consisting of but one room, to which the high winds of this region had free access. These high winds caused her much alarm, she now and then dressing herself at night and waiting in suspense, lest as she expressed it they might have a general "smash up." Before the child was born, and while she was still in labor, she narrated the above facts about the high winds, and gave me the additional information of her "mortal fear of toads." They were in her strawberry garden in multitudinous numbers, and she had been, on one occasion especially, so frightened by one of

them, that she did not regain her usual equanimity for a number of days.

Difficulty may arise in the delivery of these acephalus children, for the sharp and jagged edges of the bones where they terminate so abruptly just above the eyes and ears are likely to lacerate the soft parts of the mother, especially where the existing portion of the head is large. The application of the forceps, where instrumental delivery becomes necessary in these cases, will probably be attended with trouble, for the reason that the head rests almost, if not quite, on the shoulders, there being but little more than an inch from the shoulders to the jagged edge of the abruptly terminating cranial bones, and as a result there would be danger of the forceps slipping, especially as the neck itself (if it can be called one) is quite as large and full as the base of the cranium, and not being able to close the forceps, the pressure and traction must of necessity be wholly from the extremities of the instrument, which will almost certainly slip from the head when traction is produced. The child, however, in these cases, not being viable, there can be less objection to the use of the guarded crotchet, the perforator not being needed. If, in the use of the crotchet, it is feared the soft parts of the mother may be lacerated by the sharp, uneven edges of the bones, the craniotomy forceps might be successfully used to crush the re-

FIG. 1.

FIG. 2.

sisting bones at the base of the cranium, and in this way accomplish the double purpose of preserving the soft parts of the mother and facilitating labor; the latter object being one of special moment for the reason that there is in these cases a disinclination on the part of the head to engage in the passage of the true pelvis This is owing to the abrupt termination of osseous structure leaving a perfectly flat, broad surface, with sharp irregular edges instead of the usual oval vault. Should there be a vascular tumor, it is inconsequential so far as these operations are concerned, as they are semi-gelatinous and readily broken down under the the touch if desirable.

A number of these acephalus children have been reported in medical journals, a majority of them having been females, and a greater number than would have been expected have been *one* of twins the other child being perfect. In these cases of double monsters, the imperfection of one may be owing to the crowded condition during fœtal life, mechanical injury or to insufficiency of nutrition from the mother for perfect development of both children.

The importance of guarding pregnant females against bodily discomfort, and of securing in them tranquility of mind if possible, cannot be too earnestly impressed on the minds of those who may have a controlling influence over them.

ORIGINAL TRANSLATIONS.

THE HEREDITARY TRANSMISSION OF SYPHILIS.

By Professor M. Kassowitz, M. D.,

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Translated by Milo A. Wilson, M. D., Denver, Colo.

(*Continued from January Number.*)

III. *Can a Non-syphilitic Mother give Birth to a Syphilitic Child?*—This cardinal question must also be studied from two points of view. The next inquiry, therefore, is, whether a healthy woman can in general carry a syphilitic fœtus, and give birth to a syphilitic child; and further, whether a healthy woman, notwithstanding she carries a syphilitic fœtus, can also remain healthy, or whether she, as a consequence, becomes inoculated herself? It is evident that, in order to answer our principal question, whether heredity takes place through procreation or through the placental circulation, really only the first point is worthy of consideration, and the second, viz., the possibility of a retro-infection of the

healthy mother, is of secondary importance. But it is equally clear that both questions are practically inseparable, and that the bare fact of the birth of a syphilitic child, from a non-syphilitic mother, admits of decision in both ways.

This fact is, according to my experience, which corresponds to that of the by far greater number of all observers, an incontestable and exceedingly frequent one. As it is, notwithstanding, still doubted and denied on many sides, and even up to the most recent time, it is incumbent upon me, on the one hand owing to this opposition, and on the other on account of the fundamental importance of the subject, to furnish fully and circumstantially the confirmatory evidence, and to invalidate the arguments of its opponents. This evidence is divided into the direct, *i. e.*, that founded upon fact, and the indirect, that derived from evidence considered as conclusive.

Direct Evidence.—The circumstance that women in whom syphilis is not recognizable have given birth either to children who immediately at birth show the symptoms of inherited syphilis, or to those who develop the same within a short time after birth, is affirmed by innumerable authors, and it would be utterly impossible to make mention of all who have written upon this subject. We can simply say that all authors who have studied this question defend the possibility of this occurrence, with the exception of the few whom we have designated as its opponents. We may name, however, a few of those who have made observations respecting this subject, and who declare positively that they have carefully and thoroughly examined into the state of health of the mother, and continued to observe the same during a protracted period of time.

After Swediaur (1801), who first defended the immunity of the mother, Bertin (1810) next gave a detailed history of the disease. Haase (1828) likewise furnishes a clear, trustworthy and well-written report, of four successive syphilitic births, from an entirely healthy mother, whom he, as family physician, had repeatedly examined and closely studied during the whole time. Similar reports are to be found in Colles (1837) and Acton (1845). In 1848 a commission of Swedish physicians, after an investigation, especially in reference to the subject in question, decided that many instances could be cited in which the syphilis of the father transmits itself to the child without the mother becoming inoculated with the syphilitic virus, either before or during the period of pregnancy. Depaul (1851) reports the birth of a child afflicted with pemphigus syphiliticus from a perfectly healthy mother; the father, two months before the fecundation, having suffered from general syphilis. In 1851 F. Meyer published forty-nine cases of hereditary syphilis, in which, from an examination of the respective

mothers, he found them to be perfectly well; apart from these, two other cases in private practice, in which the mother of syphilitic children was examined repeatedly, without finding any evidences of syphilis. Bednar (1853) says that in the Vienna Foundling Asylum he found twenty cases where the mother was afflicted with syphilis; as also ninety-nine other cases where the mother was healthy, or suffering from non-syphilic affections. Of the latter, thirty-six remained in the institution as nurses, and suffered neither from primary nor secondary syphilis, although during their stay in the asylum their children became ill with hereditary syphilis. In thirteen out of twenty-three cases of hereditary syphilis, De Meric (1855) also found the mothers, at the time of labor as well as subsequently, to be perfectly well; the remaining ten were syphilitic. Bidard (1853), Maisonneuve and Montanier (1853), and Faure (1854), report like experience. In seventeen cases of hereditary syphilis, with diseased internal organs, Hecker could, in fifteen of the number demonstrate positively the healthfulness of the mother. Trousseau (1855) constantly defended the possibility of a complete immunity of the mother, and gives the following case:

A young physician, who previously had had secondary syphilis, but was apparently cured, married a healthy young girl, aged seventeen, who six months afterward, gave birth prematurely to a wretched-looking child, covered with pemphigus bullæ. A second child was born at term, but feeble, and with unmistakable symptoms of syphilis, while the mother was throughout, and continues to be, entirely well.

Parker (1863) gives most minutely three cases, in which men with latent syphilis married healthy women, from whom a number of syphilitic children were born, while the women, upon a careful examination immediately after the first labor, as well as later, presented no signs of syphilis. Three equally well-described cases by Drysdale (1868) are entirely analogous. In several cases of children with hereditary bone syphilis, Waldeyer and Kobner (1872) found the mother, upon the closest examination, to be entirely healthy, while paternal syphilis undoubtedly existed. Kobner (1864) himself had already in other cases verified this fact. Frankel (1872) found fourteen out of seventeen mothers of children with congenital syphilis to be sound. In one case the mother died from some puerperal affection during labor, and a *post mortem*, especially made for this object, revealed no trace whatever of a syphilitic character. Parrot (1872) could find no specific lesions in a young mother, whose child was suffering greatly from pemphigus and bone syphilis, while the syphilis of the father was distinctly recognizable. Very recently Gingeot (1873), Kjellberg (1874), Woodman (1874), and others, reported like facts.

The number of similar references could easily be increased, I might say, to an interminable extent. In addition must also be mentioned that all those writers who acknowledge the possibility of a retro-infection of the healthy mother, yet consider it as not occurring in all cases—such as Ricord, Vidal, Hutchinson, Tyler Smith, and many others, who concede fully and also distinctly report that, in very many cases, the mother of an hereditarily syphilitic child was, and continued to remain, in a perfectly normal condition.

Before beginning the consideration of my own individual observations, I give the figures bearing upon the condition of health of all the mothers of congenitally syphilitic children, taken form the reports of the Vienna Foundling Asylum:

	Hered. Syph. Children.	Mother Syphilitic.	Mother Unknown.	Mother Healthy.
1854	22	8	7	7
1855	20	9	6	5
1856	25	8	12	5
1857	18	4	2	12
1858	24	10	5	9
1859	18	5	6	7
1860	33	13	3	17
1861	37	5	9	23
1862	23	9	2	12
1863	21	9	1	11
1864	28	5	8	15
1865	40	13	12	15
1866	30	9	12	9
1867	27	5	13	9
1868	34	10	14	10
	400	122	112	166

These data are thoroughly reliable in so far as they relate to the syphilitic and non-syphilitic mothers. The former are brought from the lying-in to the syphilitic division, and the child is transferred to the foundling asylum, as also the diagnosis of syphilis in its mother; the latter, after they have been proved in the lying-in ward as void of suspicion, are placed after their confinement in the foundling asylum, and there again scrupulously examined; and if, as is frequently the case, they are retained as nurses, they are, during several months, very closely observed, repeatedly and thoroughly examined. Since my attendance upon the lying-in and foundling institutes, now about a year, I have been able to thoroughly convince myself in relation to this through the evidence there presented, and have there seen, at least in twenty cases, children with the most perfect types of congenital syphilis, while their mothers were often in a condition of splendid, we might say blooming health.

In two cases where the children were born with a specific vesicular eruption, the mothers, upon repeated examinations (made also during the middle months of pregnancy), were found not only to be in a normal condition of health, but syphilis in the fathers could also be definitely proved.

If I now pass on to the consideration of my own investigations, I find a complete confirmation of the statements of the above-mentioned writers. Of the one hundred and nineteen cases which I have recorded, the conditions or circumstances of heredity were doubtful in but forty-three (and, in relation to a large number of these, I sacrificed my conscientiousness and included them, for the reason that these conditions—specific heredity—could be claimed with great probability); in forty-three of the remaining seventy-six cases, the mother was proved to be undoubtedly free from syphilis; in twenty-three cases both parents were affected, and in ten the mother alone.

By a careful observation, continued in the majority of the cases through many years, I became entirely convinced of the healthfulness of these women—apart from the indirect evidences which are later to be discussed and illustrated by examples. The mothers, highly gratified with the careful and, as we shall presently see, very generally successful treatment of their children, remained, almost unexceptionally, faithful to the institution during a number of years, and presented themselves there with their children at short intervals. The examination of their genital organs was of course the exception, not the rule, and this special examination really is of but slight importance, when made in relation to syphilis of many years' standing. On the contrary, a careful examination was made, almost every time, of the mucous membrane of the mouth, nose and throat, of the easily accessible portions of the skin, especially the arms, hands and palms, the scalp, the lymphatic glands of the neck, nape and elbows, the cranial bones, clavicles, tibias, etc. I would add, further, that a single such examination, should it be devoid of result, still would not be a sufficient evidence of the absence of syphilis; yet it would be impossible to conceive of a latency existing in such a way that an individual, for instance, who for years was examined at intervals of from one to two months in the above-mentioned manner, and found to be exempt, could nevertheless, be considered as suffering from this disease. Much more, rather, I have thoroughly convinced myself that in all cases in which the mothers of children which I have had under observation, were themselves affected with the disease, as in those cases also where I had the opportunity to see and examine frequently the fathers, also syphilitic, I succeeded, in every examination conducted in the above-given manner, in proving the existence of an

undoubtedly specific symptom, in most cases even the co-existence of several; and that these, even under proper treatment, very frequently relapsed. It is still to be observed that all the mothers given above as healthy were positively without any specific treatment during the entire period of observation; and therefore, the symptoms of an imaginary hidden affection were not, as we might say, suppressed through medical means. It is therefore at once inconceivable that syphilis, existing in an individual at no time under specific treatment, and subjected during many years to a continued careful observation, would remain absolutely undeveloped, and the robust health, the abundant growth of hair, etc., be not in the least altered, as was the case in the forty-three instances above mentioned.

In conformity to this, I would not hesitate to consider the good health of the mother in the above-given number of cases as proved simply from these direct observations alone; besides which, as we have seen, they coincide exactly with the innumerable observations of others.

This opinion is, however, materially strengthened, exclusive of this. by the following considerations:

Indirect Evidence.—Non disputed, chronic syphilis in the man, either latent at the time of marriage, or appearing only in non-inoculable symptoms.

CASE I. *Father syphilitic Seven Years; Mother healthy; Child syphilitic.*—A stone-cutter, aged twenty-seven at the time of marriage, was inoculated in his twentieth year, and after the lapse of several weeks had a general eruption and ulcers of the throat; a year thereafter, persistent osteal pains, ulcers on the lips and upon the tongue, all of which disappeared after treatment with decoctions. Since then the genitals and surrounding parts have been free from specific lesions. At the time of his marriage he was apparently well, with the exception of a frequent recurrence of headache at night. His wife, aged twenty, was according to his statement, a virgin at the time of marriage. She became at once pregnant and in the middle of the ninth month gave birth to a feeble but seemingly healthy child, which throve remarkably at the mother's breast. When three weeks old he suffered from nasal catarrh, and in his fifth week there appeared a macular exanthema and papules upon the soles of the feet and heels. The father showed at this time nodes upon the frontal bones, very perceptible both to sight and touch, which vanished under the combined use of protoiodide of mercury and iodide of potassium. At the first examination, about ten months after marriage, the mother appeared to be robust and strong, with an abundant growth of hair, and absolutely no indications of syphilis. During the succeeding year I saw her almost every week, and found her always healthy.

CASE II. *Chronic Syphilis of the Father, with, shortly after procreation, an Eruption of Ulcers of the Skin; Mother well; Child syphilitic.*—A widower aged forty-two married a woman aged twenty one in August, 1871. She became quickly impregnated, and noticed in the third month of her pregnancy that the entire surface of her husband's body was covered with ulcers the size of a half-kreutzer. The attending physician regarded these as evidence of old syphilis, and treated the patient by inunction for two months, whereupon the lesions disappeared. In July, 1872, the wife gave birth to a boy at term, who in the third week, became ill from a general eruption, which frequently relapsed in the form of papules upon the genitals and about the anus, and later, of ulcers upon the lips and tongue. Several weeks after the birth of the child, the father, who since that time had again suffered from nocturnal headaches, died from pneumonia. During the whole period of pregnancy the mother felt entirely well; her confinement was normal. Three months after labor she was robust, of a blooming appearance, the hair-growth abundant, and an examination made in relation to syphilis was entirely negative. She appears to-day, now four years since her marriage, and three years since the birth of her child, perfectly healthy, having been constantly seen at intervals of from one to two months.

CASE III. *Syphilis in the Father of at least Eight Years' Standing; Mother healthy; a Succession of Three Syphilitic Births, finally a Healthy Child.*—A laborer aged thirty-three, who was a soldier from his twentieth to his twenty-fifth year, and who acknowledged that during that time he had been in the hospital on account of syphilis, but since then has been apparently well, married in June, 1867, a girl seventeen years old.

First child, 1868.—Girl; full term; very feeble; had when but a few days old an eruption, and died soon thereafter.

Second child, 1870.—Boy; attacked in the third week by a violent eruption and died in the fourth month.

Third child, 1872.—Boy; became sick in the fourth week from a macular syphilide, and died several days later from inflammation of the lungs.

Fourth child, 1874.—Boy; strong and robust, at present a year old.

The mother, examined for the first time in the year 1870, then three years after her marriage, and immediately after the birth of the second syphilitic child, was entirely healthy, of fresh, bright appearance and abundant hair-growth, corresponding to her youthfulness. She is to-day, as then, free from every suspicious symptom, although since that time she has been seen and examined innumerable times. Her husband, whom I saw but once in the year 1870, and who shirked the treatment proposed for him, is, so far as known, well.

These typical cases accord in almost all respects with most of the remaining cases. In forty-three cases in which the mother was found to be healthy, it could be definitely stated in thirty-eight instances that the father before his marriage or concubinage had had syphilis, and in five cases only had he become inoculated after marriage. The latter cases are obviously so uncommon for the reason that, if the husband becomes diseased with a primary lesion during married life, the wife very rarely escapes inoculation (as will be shown later in cases where both are diseased). In these five cases it could be readily explained through what circumstances the woman avoided inoculation.

CASE IV.—*Father inoculated after Marriage; Mother remains healthy; a Series of Four Syphilitic Births.*—From 1865 to 1866 the father lived with his present wife as his mistress without her becoming pregnant. Called to the Italian campaign of 1866, he contracted primary syphilis in Italy; returned from there at once to the hospital, where he remained five months, and was treated internally and by inunction. Afterward marrying this same woman, he was seemingly well, and continued so, according to his statement, until the present time, except occasional headache and sore-throat.

1. In November, 1867, his wife gave birth to an eight-months' still-born boy.

2. December, 1868, to a boy, still-born, nearly at term.

3. May, 1871, to a girl, upon whom there appeared in six weeks a maculo-papular exanthema, and a diffuse syphilitic infiltration of the skin upon the hands and feet, with ulcers about the ankles and nates. She was treated successfully.

4. In November, 1873, to a boy. In the sixth week he presented a slight macular exanthema; he was successfully treated and has been well ever since.

Since the birth of the child in May, 1871, the mother has been until the present time under constant observation; is strong, hearty, and was entirely well both before and during this period of more than four years.

In the four other cases, the birth of one or more healthy children took place before the husband was inoculated with syphilis. The disease was contracted during a temporary separation of the husband and wife, and was, as in the above described case, rendered inocuous, at least for his wife, by the treatment he received in the hospital. The subsequent succession of births took place then as follows:

CASE V.—*Inoculation of the Husband after the Birth of Three Healthy Children; afterward Two Syphilitic Births; Mother healthy.*

1. 1863.—A healthy child.

2. 1868.—A healthy child.

3. 1870.—A healthy child.

During the last confinement the father became diseased and was treated for two months in the hospital.

4. 1871.—A miscarriage at six months, the child still-born.

5. 1873.—A delicate female child; it became ill within sixteen days after birth with a violent coryza and a universal macular eruption of a strongly-marked syphilitic type; she recovered. The wife was then, and has since remained, perfectly healthy.

CASE VI.—*Father inoculated after the Birth of the First Child; Six Successive Syphilic births; Mother well.*

1. 1866.—Healthy female child; dies when three months old from intestinal catarrh.

After the birth of this child the father abandoned his mistress, became diseased, and apparently recovered; the woman, when they became reunited in 1868, remained free from disease.

2. At the end of the year 1868 an abortion, female, at five months.

3. 1869.—An abortion, female, at six months.

4. 1870.—A miscarriage at seven months, child still-born.

5. 1871.—A seven months' female child, which after a few days had a specific eruption, and died when four months old.

6. December, 1871.—A boy, born at the eighth month; within eight days he showed a macular exanthema, was cured, but at present is severely affected with rickets.

7. 1874.—A boy, born at term; fell ill when two months old with a very slight maculo-papular exanthema, and is at present well.

Both the other cases were similar. Several healthy children were followed by premature births, and then by living syphilitic children.

In twelve only of the remaining thirty-nine cases the series of births was begun by the birth of one or more premature or still-born children. In the by far larger number (twenty-seven) the succession began at once with a strong, viable, full term-child, which only some time after birth gave any visible evidences of syphilis, and which, as we shall see later, corresponded every time to syphilis of at least several years' standing, or actively-treated syphilis, in the parents.

This leads us to the second indirect evidence, viz.:

2. *The birth of a syphilitic, nevertheless a mature, viable child, argues against a recent (one to two years') non-treated syphilis of the progenitors.*

This statement, which we must here anticipate, is if it be founded upon truth—and this will be proved later in the proper place—one of great importance in relation to the question with which we are now concerned. It confirms more than anything else those cases in which an elderly man, with confessedly chronic syphilis, marries a young girl, impregnating her

immediately, and in which case the child is born at term and viable, but at once becomes ill with a relatively modified form of congenital syphilis (first to third case); that, in fact, under such circumstances, there could not exist an inappreciable syphilis of the mother, because, as we shall see, an inoculation of the mother of so recent date, if transmitted to the child (this transmission taking place before the disease in the mother is modified by treatment), would without exception produce as a result miscarriage and non-viability of the fœtus.

Further, through the above proposition, those cases are explainable in which the mother contracts a second marriage (or other sexual relation) and, after she had already given birth to healthy children by the first marriage, in the second she has a child, certainly syphilitic, but full-term and viable. This was observed seven times in the above-mentioned cases.

CASE VII.—*A Healthy Woman has, in her First Marriage, a Healthy Child, and two years thereafter, by a Second Husband, a Viable but Syphilitic Child.*—This woman, aged twenty-two, had by her first husband:

1. 1872.—A healthy boy, at term, which still lives and continues well.

This relationship was then dissolved, and she has lived for the past two years with a porter, aged thirty, who was formerly a soldier.

2. *September*, 1874.—A female child, at term, which seemed healthy for ten weeks, and then became ill with a macular exanthema, followed by a few papules. Through a brief course of treatment, it soon recovered, and the excellent nutrition of the child was in no way affected. The mother was and is perfectly well.

Here not only the viability of the child, but also especially the late eruption, and the very slight intensity of the child's illness (as will be likewise later proved), indicate chronic and considerably weakened syphilis of the progenitors. As, however, the mother had borne an entirely healthy child two years previously, she is upon this ground alone—apart from her quite negative condition—to be excluded from any share in the transmission of the syphilis to her child.

Likewise, in the remaining six cases, the birth of a mature and viable syphilitic child was preceeded by the birth of one entirely healthy by a first marriage, and this circumstance also confirms here the correctness of the negative condition of the woman found upon examination.

3. *The birth of healthy children after spontaneous disappearance, or medical eradication, of the transmitting power of syphilis in the father.*

We must here take preliminarily into consideration a very important law, which, in the further course of this work, will be extensively discussed, viz., the law of the spontaneous subsidence, and finally, the extinction of the transmitting power of parental syphilis. In consequence of this spontaneous subsidence we have succeeding severely diseased embryos,

which succumb to the inherited affection even within the uterus, children which are viable, but which give distinct evidences of syphilis; then again, those which become ill to a very slight extent only, and relatively long after birth; and finally, children are born who remain entirely free from syphilis. This loss of the power of transmission is, however, not necessarily combined with a state of perfect health on the part of the progenitors. On the contrary, we observe very frequently that in just such persons symptoms of a decided tertiary character are manifested —periosteal lesions, rupia, gummy growths of internal organs, destructive bone affections, etc.; while beyond a doubt, all those symptoms which are capable of inoculating (consequently the so-called secondary symptoms) must have disappeared. If now, a man with syphilis in an advanced stage marries a healthy woman, and begets one or more children, to whom this modified form of syphilis is still transmitted, and then, the transmissibility in him becoming extinct, healthy children are born, we can from the circumstance alone in itself, infer that the woman, after two or more years of marriage, can bear healthy children, exclude any syphilitic affection in her; for if she had been inoculated at the time of her marriage, it would have been impossible for her, especially without previous treatment, to have borne healthy children.

CASE VIII.—*Man syphilitic; Treatment of Long Standing; Woman healthy; at first a Child with a Slight Form of Syphilis, then a healthy one.*—A carpenter, aged twenty-four, who in his eighteenth year contracted syphilis, and was treated for many months in the hospital, begat with his mistress, aged nineteen:

1. A male child, born at term in February, 1872, which only at the end of the sixth week had a papular eruption, rhagades upon the lips, etc. He was cured.

2. *February*, 1874.—A boy, healthy at birth, and has remained so. He is at present still under observation.

CASE IX.—*Husband Syphilitic; Treatment of Long Standing; Wife healthy; a Healthy Child follows the Birth of two Syphilitic yet Viable Children.*—A Hebrew peddler, aged twenty-eight, who contracted syphilis in his twentieth year, and had been repeatedly treated for the same, married, in the beginning of the year 1869, a girl aged twenty.

1. *October*, 1869,—Boy; in his third week gave evidences of congenital syphilis; recovered. Died, when six months old, from intestinal catarrh.

2. *October*, 1870.—Boy; became ill at the sixth week and was cured; no relapse.

3. *January*, 1874.—Boy; was born well and continues so.

The mother has been under continual observation, from November, 1870, until the present time, and gives no signs whatever of syphilis.

The same final conclusion in relation to the health of the mother can be admitted in those cases in which, after the birth of one or more products of syphilitic conception, the father *alone* goes through a thorough course of mercurial treatment, in consequence of which the power of transmitting the disease is temporarily or permanently suppressed, and the child immediately following is and remains free from syphilis.

Evans (1847): After a woman had aborted five times, the husband was subjected to a most thorough course of mercury, and the succeeding child was healthy.

Martinez y Sanchez (1855): A young man, eighteen months after a general eruption, which he believed to have been cured by mercurial treatment, married a healthy girl, who one year subsequently gave birth to a child, which even when born was affected with coryza, and within the next few days had an undoubtedly syphilitic eruption and died when eighteen days old. He was now thoroughly treated with mercury for two months. Soon after the termination of his treatment his wife became pregnant, and bore a perfectly healthy child.

Davosky (1867): Father syphilitic five years before marriage; the first two children presented undoubted evidences of syphilis (pemphigus, ozæna). Upon this the father was treated by inunction, and the succeeding births were of healthy children.

Similar cases are reported by Benjamin Bell (1873), Abelin (1868), Kjellberg (1872), and others.

I append here also a very interesting case observed by me in private practice:

CASE X.—*Well marked Chronic Syphilis of the Husband; Wife healthy; after the Birth of Three Children, still-born, a mercurial treatment of the Husband followed by the Birth of a Healthy Child; subsequent to this, Tertiary Symptoms in the Father.*—A well to-do citizen, formerly an officer, contracted primary syphilis in the year 1864, and was apparently cured of this and the secondary symptoms which followed; whereupon, in the year 1867, he married a young girl, aged twenty, of good family. She gave birth—

1. End of 1867, to a male child, at six months; still-born.
2. 1868.—A girl at seven months; still-born.
3. 1869.—An abortion at three months; male.

Upon the children externally there was nothing perceptible. In the winter of 1872-'73 the husband's body was covered with serpiginous ulcers. He was treated by an eminent syphilographer and his assistants (to whom I am indebted for information concerning the syphilis in this case), at first

by inunction, then with iodide of potassium, and was in the spring of 1873 apparently restored to health. About this time his wife conceived for the fourth time and gave birth—

4. In January, 1874, to a full-term, healthy and unusually strong female child, which very soon after its birth, came under my care for dyspeptic difficulty (it was artificially nourished) and from that time until the present day I have had it under continual observation. At no time were there any signs of inherited syphilis. In the summer of 1873 the father was at "Jodbad Hall"; nevertheless, in the succeeding winter there appeared gummata of the skin and necrosis of the ethmoid and nasal bones; in the spring and summer he was sent repeatedly to the hall, and died there in mid-summer, with evidences of milliary tuberculosis. His wife, who was not informed of the nature of her husband's illness, and upon this, as well as upon the causes of her miscarriages, is still uninformed, was, according to the assurances of attending physicians, always well; she was, therefore, never under anti-syphilitic treatment, and has enjoyed for the last two years, during which time I have had frequent opportunity to observe her, the most perfect health.

Those cases also belong here, in which women, whose husbands suffered from chronic syphilis, bore syphilitic children without themselves becoming diseased, and who, after birth of the first, with the second non-syphilitic husband gave birth immediately to healthy children. Observations like these, and others reported by Von Behrend (1849), and Deutsch (1851), prove then, again, that the women, notwithstanding their having given birth to syphilitic children in a first marriage, have themselves remained free from syphilis.

From all these innumerable observations, as well as the final logical conclusions deduced therefrom, it becomes sufficiently clear that the birth of a child with hereditary syphilis from a non-syphilitic mother is not only possible, but is to be regarded rather as one of the most frequent occurrences.

Notwithstanding, there are still some writers, as we already mentioned in the beginning, who deny entirely the possibility of this occurrence; and it seems therefore to be enjoined upon us, in spite of the already reported almost overwhelming facts, to present fully the arguments of the opponents and prove their soundness upon investigation.

After Hufeland, Vassal, Beyer and others, had already in the beginning of this century, defended the doctrine of the exclusive transmission of syphilis from the mother, without its having peen particularly noticed, M. A. Cullerier, in 1854, again came forward with the assertion that a non-syphilitic mother could never give birth to a syphilitic child; and therewith denied absolutely the direct influence of parental syphilis upon

the child. His arguments at the time were based, on the one hand, upon several casual, negative observations, in which men, syphilitic, begat with healthy women non-syphilitic children; and on the other hand, upon the assertion that he himself had never seen a child with hereditary syphilis born of a non-syphilitic mother. In his more recent work (1866) the same cases and assertions are repeated, unchanged. The first run about as follows:

A man with a squamous syphilide, tubercles of the mucous membrane, ulcers in the mouth, crusts upon the scalp, alopecia and swelling of the lymphatic glands, was treated for fourteen days, until salivation was produced, with the protoiodide (five centigrammes in twenty-four hours). He married shortly afterwards; his wife became pregnant, and bore a healthy child.

This and the remaining analogous cases prove, however, nothing further than that a mercurial course, even at the height of the disease, may set aside, even if temporarily, the capacity for the transmission of syphilis. From other cases, again, it appears only conjectural that a man affected with late tertiary syphilis begets healthy children. Both these occurrences have, however, long since been verified by good observers, and agree entirely, as we intend later to explain in detail, with our own experience. The other negative assertion appears certainly somewhat remarkable, even from a syphilographer of note, who undoubtedly from this alone, has come but little in contact with healthy mothers. From a careful examination alone of the remaining works by the same author, it is apparent that this assertion must not be taken literally. In another article (1854) I find for instance, the following case:

An *entirely healthy* woman, who had never been ill, gave birth, seventeen months since, to a still-born child, which appeared to have been dead for some time. She became pregnant for the second time, and bore a strong, apparently healthy child, which was immediately handed over to a nurse. With her it became feeble and miserable, had affections of the mouth, eruptions between the buttocks, etc. One month later it was apparent that the child was positively syphilitic.

The author has manifestly overlooked the fact that, in this statement, in which he, moreover, rejects explicitly the infection of the child by the nurse, he invalidates his own arguments. In the same paper he also states that he has four times seen children with congenital syphilis, suckled by their own mothers through a period of several months, without the mothers having become inoculated. Herein it is again also stated that the mothers were not syphilitic, and that nevertheless four syphilitic children had four healthy mothers. But when we read, further, that Cullerier had never yet seen pemphigus in children with hereditary syphilis (but had observed

frequently *congenital* pemphigus in children of non-syphilitic mothers); that he, further, had *always* observed the eruption of hereditary syphilis at the end of the second or third month; that, in his experience, the papular form of hereditary syphilis was entirely exceptional—we cannot avoid the suspicion that the writer, exceedingly partial to his theory, was very rigorous in the diagnosis of hereditary syphilis, and overlooked, by way of example, the frequent cases of congenital pemphigus, and declared them as non-syphilitic.

Notta, Follin, and Charrier, in their writings upon this subject, which appeared soon afterward, followed exactly in the footsteps of Cullerier, without advancing anything new whatever. Notta (*loc. cit.*) gives seven cases, in which a man, syphilitic prior to, or also at the time of the fecundation, procreated healthy children with a healthy woman. But there is nothing given, either as to the intensity of the disease or anything relative to treatment. In four cases, which are annexed to these, men with syphilis have, with syphilitic women, procreated syphilitic children —which is, indeed, not very remarkable. Also, in Charrier's six cases, two are of the latter kind, consequently quite irrevelant to our question; in the other four cases every thing in relation to the stage of paternal syphilis, and to its treatment, is omitted.

Oewre investigated this question in a similarly radical way, just like these his predecessors. The materials upon which he bases his conclusions exceed the others only in amount, and run exclusively over similarly negative ground. He also denies that the semen of a syphilitic father can have any influence upon the offspring, and believes, therefore, that congenital syphilis always arises from the syphilis of the mother only. For the confirmation of such a contradictory assertion, diametrically opposed to the definate observations of all others, we should also expect at least the following positive facts to be given as a basis: That the writer should communicate the cases of hereditary syphilis observed by him, describe the disease of the mothers, with all its symptoms, intensity, and duration; state the influence of the disease upon the successive children; and finally, state his experience as to the origin of the syphilis in the mothers, whether and when they were inoculated by their own husbands, or whether they were already syphilitic at the time of marriage. In the three articles by Oewre there is nothing whatever to be found in relation to this. But we are told again, however, that in twenty-four cases men who had been syphilitic were afterward married and procreated healthy children. Here, also, the most important data are wanting, and we remain completely in the dark as to the course of the disease, the treatment, as to any cure or relapse, and as to the condition of the father at the time of procreation. We learn that two, three, five, seven, eight and nine years had elapsed

between the syphilitic infection of the father and the birth of the healthy child; the longest intervals in these cases being by far the most frequent. To the objection bordering upon this, viz., that in just these cases the syphilis of the father was cured, Oewre replies by saying that he rejects the possibility of the cure of syphilis. But this assertion, beyond question, contradicts entirely the results of general experience, which acknowledge that "syphilis *can* be entirely cured, and indeed in a comparatively short time, as it is now undoubtedly proved that a second inoculation can take place, even but a few years after the first" (Baumler). But, without regard to this, we have already learned, and shall prove positively in its proper place, that a mercurial treatment of syphilis in the parents has a remarkable influence upon the heredity; that the power of transmission will, even without treatment, gradually lose itself; and that the heredity in pronounced tertiary forms (and such forms are referred to in several cases of Oewre's) very often does not take place. Meanwhile, Oewre defeats, unwittingly, this his own argument, in the most perfect manner, with the nineteenth case of his first treatise (page 13):

A woman is inoculated by her husband at the time of conception, and aborts in the fifth to the sixth month. One year and a half, also six years thereafter, she gives birth to healthy children. (No statement whatever is made relative to treatment.)

If, consequently, a woman who has contracted syphilis can give birth one year and a half afterward, and still later, to healthy children, it proves that also in women (in whom there is no doubt of the power of transmitting syphilis) this power itself may disappear, even after a short time, either spontaneously or in consequence of anti-syphilitic treatment. It is then, incomprehensible why, in men, this disease or at least the power of transmitting the same, cannot equally disappear, especially after the lapse of five, eight, or nine years. For this reason, those cases in which a father, who had been syphilitic, and who, after the lapse of this number of years, had procreated healthy children, prove absolutely nothing, if produced even in still larger numbers, against the possibility and frequency of the inheritance of syphilis from the father.

A further argument of Oewre's is to the effect that, in those cases in which not only the mother is syphilitic, but the father also, an accumulative operation of both is wanting, because the condition of the fœtus appears entirely as if the mother alone was syphilitic. This assertion is simply stated, without the slightest attempt being made to verify the same by facts, as is generally the case in the many observations given by Oewre, in which we have none at all, or only the most scanty details, upon the condition and fate of the embryo. But, without regard to this, such an assertion is, taken in the abstract, impossible to prove, because it lacks every point of

comparison, and no one can say, in any special case, how great would have been the intensity of the disease had this or that condition been different; moreover, we shall still have opportunity, in the course of this treatise, to demonstrate how such an accumulative action, even if it cannot be proved in a single case, may still, in greater numbers become absolutely undeniable.

The innumerable definite investigations, which prove the possibility of the immunity of the mother, are disposed of in brief by Oewre with a doubt as to their reliability; he possesses, at the same time, sufficient self-denial to place in doubt, in order to *favor* his theory, the correctness of five other observations, which he made partly himself, and took in part from the records of his hospital; in these cases, also, the immunity was undeniable, corresponding to the experiences of others who have investigated this subject.

We must, therefore, in view of the exceeding feebleness of the opposing facts, and the slight, very inadequate proof of their contradictory arguments, abide by our opinion *that the possibility and great frequency of the birth of syphilitic children from non-syphilitic mothers are fully established,*

We will content ourselves at present in pointing at the great importance inherent in this sentence, relative to the decision of the principal question—heredity through the cells of propapation, or infection by means of the placental circulation—and, in the meanwhile, shall postpone until later our more detailed conclusions. Here, however, is the most appropriate place to bring at once into consideration the further questions relating to the condition of health of the mother.

(*To be continued.*)

THE DENGUE IN CAIRO DURING 1880.

By Dr. J. Rabitsch, of Cairo.

TRANSLATED FROM THE GERMAN BY W. EDMUNDSON, M. D., DENVER.

The disease which we have been accustomed to call *Epidemic gastro-rheumatic fever*, has long been known in both the East and the West Indies by the name of the *Dengue*. The oldest account of this malady is to be found in an Arabian Chronicle (published at Bulak, in 1789), which contains the following passage:

"About the middle of the month of July, 1779, there appeared an epidemic disease called the 'knee-aching disorder,' in the city of Cairo and in the surrounding country. It attacked persons of every age—even little children. It was characterized by the abruptness of the attack; by great elevation of temperature; by headache and intense aching of the knee joints."

In the year 1824, the dengue raged in Calcutta, and almost all the inhabitants, numbering about half a million, were seized with it. From this locality it spread as far as to the West Indies, when, according to the *Medical and Surgical Journal* for Oct., 1828, the entire population of St. Thomas and Vera Cruz, with scarcely a single exception, were stricken down with this fever.

From the descriptions given us by the various East India and West India physicians, we have the following outline of symptomatology: sudden illness without previous warning; mental depression; headache especially in the region of the temples; heaviness of the eyelids; slight rigors; pain in the muscles and in the shoulder-blades; intense aching either in a single joint, or in several, or all of the joints at once; the aching in the knee joints and in the loins almost always present in a very high degree; exanthemata of various kinds, especially a scarlet colored rash, which, commencing with the hands spreads in a few hours over the arms, breast and face, and subsides in from twelve to twenty-four hours—the hands being at the same time stiff and swollen; pain in the eye-balls from pressure on the eye-lids; in the commencing stages, elevated temperature (no observations with thermometer reported), with dryness of the skin, afterward copious sweating from time to time; the tongue coated and the taste disordered; the pulse quick, often rising to double its normal rate a few hours after the attack; the bowels constipated; the stomach nauseated, and vomiting often present in an aggrevated form; slimy and bilous matter being ejected; the average duration of the disease, three days, exceptional cases lasting a week; and all cases ending in recovery.

From the end of October, 1880, to the end of December of the same year, I had abundant opportunity to observe cases of the dengue. Since the greater portion of the native population had already had the disease, the number of those who were attacked was less than it would otherwise have been, yet, thirty cases came under my personal observation during the month ending with the 31st day of December, 1880.

Among these were individuals who had hitherto escaped, as well as those who had already passed through an attack, and had been seized a second time, which occurred in not more than three or four per cent of the total number of cases. A few of the patients were newly arrived

strangers, but nearly all of this class of persons escaped. The symptoms were similar in all, but as the end of the year approached the disease assumed a milder type.

While it is perfectly clear that the disease has been epidemic in this locality, the causes which gave rise to it are involved in obscurity. Since my arrival in Egypt (1876), the underground moisture has been at times the same in degree as during the past year. At times it has been greater and at times it has been less; but during these previous years there has been nowhere in this country a dengue epidemic. At least up to 1880, I saw not a single case which manifested that combination of symptoms which characterizes this malady. That it was imported from the East Indies through its contagious nature seems very improbable. Its period of incubation is not longer than six days as is proven from the circumstance that foreigners who were attacked were taken ill the sixth day after their arrival at Alexandria and the fourth day after reaching Cairo.

On the other hand, travelers from the East Indies require at least twelve days to perform the journey between that country and Egypt; so that the dengue would have had time to develop itself and die out during the passage. More conclusive, however, than this theoretic view, are the facts furnished by Schmitt in regard to this subject:

"At the time of its appearance in Cairo there were those who called it the Indian fever, which would imply that the disease was imported from the extreme Orient, and necessarily by the Suez canal. The hypothesis that this fever came to us from the Indies I believe to be a very improbable one, from the fact those very cities which are in direct communication with the Red Sea; to wit, Suez, Port Seyd and Ismalia, have almost entirely escaped."

I am enabled to add the following item of information in relation to the beginning and spread of the disease in Egypt. It was given me by Dr. Grant, of Cairo, under date of Nov. 22nd, 1880. "I can trace it back to the middle of July (1880), but its first well-marked case occurred on the 31st of August. The patient had the face red and somewhat swollen, and there was also some eruption on the hands. On looking back from our present experience, I consider that this was a well-marked case of the dengue."

The regions surroundiug Cairo were not spared, and many people living in the country came here to seek relief. Later in the season, the dengue made its appearance in Alexandria and in other localities; and information is coming in from all quarters concerning its prevalence throughout the land of Egypt.

[There have been several remarkable epidemics of this peculiar fever in the United States, conspicuous among which was one that prevailed

in Charleston, in 1828, when more than ten thousand persons were ill at one time; and during the epidemic about eight-tenths of the population were affected. The disease is of very frequent occurrence throughout the Southern States.—W. E.]

SELECTIONS.

SPINAL IRRITATION.*

By J. S. Jewell, M. D.

It is no part of my intention in this brief paper to enter upon a history of the literature of this disorder, beginning, as it does, in various more or less vague descriptions in the works of older writers, and from them advancing down to the present rather abundant, but seldom practically valuable literature.

My intent is rather to give the results of a rather prolonged experience with and study of this disorder. Several classes of affections have been confounded together in descriptions of spinal irritation.

In the first place, various diseases of the vertebral column itself, such as spondylitis, more especially its sub-acute and chronic non-suppurative forms, with or without enlargement or deformity. Then, again, it would appear, in some instances, to have included disease of the muscles themselves, or of the abundant ligamentous tissue of the spinal column, such as myalgias, rheumatic irritation of the external fibrous and muscular structures of the spinal column, chronic syphilitic affections, attended with pain and soreness, affecting the periosteum of the vertebræ, and chronic affections of the dura, more particularly sub-acute congestions and inflammatory affections of this membrane, attended with local pain and tenderness; also recent sub-acute affections of the sensitive tract of the spinal cord. These disorders, not to mention those of so-called hysterical origin, have either one or all been by various writers included under the term spinal irritation.

Setting these various clases of affections to one side, and directing attention to the spinal cord itself, we find wide diversities in opinion as regards the nature or pathology of the disorder in question.

It has been considered as due to congestion, or, on the other hand, as due to anæmia even of limited tracts of the cord, such as its posterior

* Prepared and read before the Tri-State Medical Society, at St. Louis, at the session of October last.

columns; or in other cases no positive opinions have been emitted as to the nature of the affection, the task of working out a pathology having been resigned as impracticable in the present condition of our knowledge. It will be impossible, in the time and space to which I limited myself in this paper, to discuss all these questions. I shall, therefore, as already intimated, content myself with a statement of the views I have finally adopted as to the nature and treatment of spinal irritation. I will begin, therefore, by citing its more prominent characteristics. Thus, in the first place, pure spinal irritation includes exaltation of the pain-sense, in the nerves which enter the horizons of the spinal cord, which are the real seats of the affection. As a rule, except for short periods in time, there are no paræsthesias, such as numbness, tingling, prickling, and other similar morbid subjective sensations, in the sphere of distribution of the nerves in question. As a rule, marked anæsthesia of the tact-sense is not present. But there is a true hyperalgesia, or exaltation of the pain-sense, which is the more marked as the sensitive nerve trunks involved are shorter. In other words, the nerve twigs which supply the skin over the spinal column itself are known, of course, to be shorter than those which proceed from the front of the body or from the limbs. The longer the nerve trunk the less irritable it seems to be; the shorter its course is before it terminates in the gray matter of the spinal cord the more irritable it seems to be. Hence, the chief external seat of morbid nerve sensibility is, as might have been expected (in view of the apparent fact just stated), greatest over the spinal column itself.

In the second place, the augmentation of pain sensibility, which belongs to spinal irritation, is more marked, as a rule, in response to a slight touch than to a heavier touch, especially if the latter is made gradually. The morbid sensibility, therefore, which belongs to the spinal irritation is not of the same nature as that which belongs to the inflammatory soreness, which, as a rule, is more painful as the pressure is more firm or forcible.

Then, again, in spinal irritation there is no regular increase of temperature, or disturbance of the circulation, or swelling either in or beneath the skin of the morbidly sensitive region, that can be determined by the most careful examination. Then, true spinal irritation can seldom be traced with certainty to physical injury of the spinal column. Then again reflex excitability of the affected zones of the cord is seldom diminished, but much more frequently than otherwise increased.

Spinal irritation seldom or never includes paralysis either of sensibility or motion, in uncomplicated cases, either in the parts which receive their nerves from the affected zones of the cord, or from parts which are below or behind them.

Spinal irritation seldom ever affects in any given case the entire length of the spinal cord, but, as a rule, only certain horizons or zones of the same, especially the lumbar, brachial and cervical zones. It usually occurs in persons having a nervous temperament and presenting more or less marked symptoms of nerve exhaustion.

The pain of spinal irritation, though frequently spontaneous, is nearly always a fatigue pain, or one which the patient describes as being a "tired pain," which is relieved, in a measure, by rest in an easy posture, made worse by exercise, and though aggravated by movements or motions, is not to the same extent so as in cases of disease of the spinal column or of the dura.

These latter disorders are, as a rule, clearly localized and present a variety of symptoms, some of which, more or less, agree with those of spinal irritation, but others offer a wide difference, sufficient to enable the careful observer to distinguish between them, or, at least, to enable him to determine the presence, in complicated cases, not only of true spinal irritation, but of the other disorders with which it is so often confounded.

Without undertaking at present to state all the reasons in view of which I have arrived at my conclusions as to the intimate nature of spinal irritation, I will state them briefly. In every case of true spinal irritation the chief seat of disease is in the spinal cord, in its sensitive tract. It includes, first of all, a nutritive lesion in which, to use a favorite phrase of mine, there is a more or less marked loss of balance between waste and repair, the former having outrun the latter. In my view of the case there is positive leanness, or substantial interstitial loss of the ultimate nerve elements. It is believed that, as in the case of the wasted muscle, or like leanness or loss of volume and weight in any given part, or even of the whole body, accompanied by a corresponding loss of energy or power, the same condition occurs in the exceedingly active and frequently overworked nerve mechanisms, especially those of the spinal cord. It is true these things have not been made the subjects of ocular demonstration, but the course of reasoning is so direct and cogent, based upon well-known facts ascertained by observation in relation to more accessible parts of the body, as to compel the acknowledgement of the position taken as substantially correct. Any part of the spinal cord which is habitually over-excited or overworked, and the consequent wear of which has gone on faster than the reparative work of nutrition for the same part, sooner or later may suffer not only a loss in volume and in power, but the process of wear and tear, when it has advanced to an extreme degree, even in a muscle, gives rise to irritation, the expression of which

is at first a mere feeling of fatigue, but if the process of wear is carried farther, fatigue graduates into pain.

If repair of the nerve waste, out of which these symptoms arise, is accomplished by rest and nourishment, not only the pain but the fatigue disappear. But if the degree of waste is great, and if the circumstances of the case are such as to retard or prevent the process of repair from being carried forward, so that the part in question remains, as regards its nutrition, constantly in that state which gives rise to fatigue and pain, then these latter symptoms, like the lesion of nutrition, of which they are the common signs, become permanent, more especially if the seat of lesion is in the æstheodic or sensitive tract of the central nervous system.

In spinal irritation, therefore, the first thing to be recognized is the lesion of nutrition just described, in which there is a more or less permanent and marked preponderance of waste over repair, the process of destruction or waste having been carried on to such a degree as to threaten the integrity of the parts, the inarticulate protest against the farther progress of wear being the constant fatigue-pain which marks uncomplicated cases of spinal irritation.

With this view, so far as I am aware, do all the phenomena of spinal irritation agree. Rest, the moderate, judicious use of anodynes, tonics, good feeding, include the methods most approved by experience. Nothing is better known than that persons affected with spinal irritation are often in a chronic manner fatigued, in some instances bed-ridden. Nothing is better known about such cases than that exercise, unless of the most moderate character, aggravates the spinal pain and exhaustion.

Having got firmly in view the nature and the immediate relations of the lesion of nutrition just described, I would next call attention to circulatory disorders which, it seems probable, follow in the wake and occur in the place of the lesion of nntrition described. For my own part, I am clearly of the opinion that within the areas of exhaustion and irritation in the spinal cord there is a fluctuating blood circulation. It may be normal, or there may be a congestion, or there may be anæmia, But this condition I conceive to be a rare occurrence and by no means a necessary factor in spinal irritation. Spinal irritation is, therefore, not due to either congestion or anæmia, whether in the posterior columns or other parts of the cord. But I can readily understand that departures from the normal state of blood circulation in the disordered areas are generally toward congestion. Both congestion and anæmia are mere incidents in the course of the disorder under discussion. The fundamental factor is the lesion of nutrition already described. It is important to admit this, not only because it agrees with all the facts, but once

fully understood, it points imperatively to the path of recovery, which happily harmonizes in every particular with the results of experience.

Having said thus much concerning the symptoms and nature of spinal irritation, I would next direct attention to its chief clinical varieties. If what has been said is true of the nature and pathology of the disorder, we may, *a priori*, designate certain altitudes of the cord which would be more likely than others to be the seats of the disease. I would point out two great clases of cases: First, those due to *over-action*, chiefly muscular in character. Second, those cases due to *over-excitation*, or in which the spinal cord is not disturbed on account of its share in the production of muscular activity, but rather on account of the excitations that play into it from different regions to be later specified.

I. Then, first of all, those cases which depend upon *over-action*. The altitudes of the cord most likely to be affected in this way are the lumbar; that is, the altitude corresponding to the lower members, or to the levels of central implantation of the sacral and lumbar plexuses of nerves. Second, the brachial zone of the cord, which corresponds to the upper members in the same manner as does the lumbar to the lower members; and, finally, the suboccipital zone, including the muscles by which more particularly the upper part of the cervical region of the spine is maintained erect and the head balanced upon the spinal column. I am not able of course to speak for others, but in my own experience I have found a large number of cases of spinal irritation to be due to over-use of the legs in standing, walking and in other occupations in which they are strenuously or persistently used for long periods in time; or at othes times due to over-use of the arms, as in sewing, embroidery, painting, piano practice and in hundreds of other occupations. in which the upper members are habitually over-used; or, finally, the same condition is seen in cases where the head is bent forward so as to put the muscles of the neck in a state of all but unremitting tension. The conditions of action described imply, of course, a constant tide of innervation to the related muscles, and this again implies continuous fatiguing activity on the part of the spinal cord; and at least the decisive irritation of extreme denutrition of those tracts of the cord which are entered by the motor and sensitive nerves of the muscles can hardly be mistaken, when I say that these three great zones of the cord are brought with exceeding frequency, into that worn, fatigued, painful state which is called spinal irritation. How over-use of the cord, especially in persons of nervous and feeble constitution, in whose cases nutrition or reparative power is not vigorous, may produce the lesion of nutrition already described, does not seem to me difficult to understand.

II. I would next call attention to that exceedingly important and, thus far, not very well defined group of cases which depend upon *over-excitation.* The horizons of the cord which may be the seats of irritation in this group of cases are almost unlimited. In this paper it will be practically impossible to describe all the particular forms met with in clinical experience. I may, however, call attention first of all to two principal levels of the cord which are frequently the seats of "spinal irritation." They are the pelvic and gastric zones of the cord. In this class of cases the supposition is, that some peripheral organ is the seat of irritative disease. It is supposed that the sensory nerves which ramify in the diseased organ are, like its other structures, involved. It is farther supposed that, so long as the irritative disease exists in the organ, a more or less continuous tide of irritative "influence" is directed by way of its nerves into the corresponding altitudes of the spinal cord.

Night and day, whether asleep or awake, an irritative influence enters the cord and contributes to the exhaustion and irritation of its related mechanisms. In this way it comes to pass that inflammatory or other irritative disease, let us suppose, of the uterus, its fundus or its neck, or disease of the ovaries, or of the rectum or bladder, or in the male, its prostatic zone or the urethra, lead sooner or later, if persistent, to exhaustion and irritation of corresponding horizons of the cord. Hence, the all but uniform tenderness, exhaustion, pain, etc., in the lumbar and sacral regions of the spine in cases of irritative disease of the pelvic viscera. Then, again, no part of the alimentary tract is so often the seat of important irritative disease as that which lies in what may be called the gastric zone. This includes the stomach, more especially its mucous membrane, the liver and the duodenum. Irritative disease, especially chronic sub-acute affections of these organs, involve their nerves, and these become the channels of a disturbing influence, which sooner or later exhausts and irritates the corresponding horizons of the spinal marrow. These horizons for the stomach, etc., lie between the third and the eighth dorsal vertebræ, or in the interscapular region. Spinal irritation situated within these limits, I have found, points, with almost unerring certainty, to irritative disease in the gastric zone.

The spinal horizons which appear, clinically speaking, to stand in connection with the small intestine, are included between the eighth and eleventh dorsal vertebræ. The horizon which, in like manner, I have found to correspond to the colon, especially its descending portion and its sigmoid flexure, lies between the eleventh dorsal and the second or third lumbar vertebræ, whereas the spinal region, tenderness of which appears to stand in connection with disease within the pelvic zone, extends from the lower dorsal down to the limits of the lumbar part of the spine

or even beyond, while diseases of the rectum, especially about the anus, and of the neck of the womb, finds its tender zone from the lower lumbar region down to the coccyx. Chronic irritative affections of the lungs and the pleura give rise, if at all, to tenderness from about the middle dorsal up to the altitude on a level with the middle cervical region.

Chronic painful affections of the pharyngeal zone, including subacute nasal and pharyngeal catarrh, give rise in some cases to tenderness in the region extending from the sub-occipital to the middle cervical region. These are understood to be approximations to the truth, as determined from a clinical standpoint.

Such are the two principal groups into which cases of true spinal irritation may be divided, according to my observation,—all cases including, as already described, a lesion of nutrition with certain symptoms to which that lesion gives rise, chief among which are more or less persistent fatigue, pain, and hyperalgesia in the nerves of the affected zone, especially those that run the shortest course from the integument over the infected region of the spine to the spinal cord. If the remarks made as to the nature and conditions of spinal irritation are correct, they point out plainly the general line along which treatment, if successful, must be conducted.

Granting the existence of the nutritive lesion insisted upon, it is plain that the first and most imperative condition to be complied with is that of rest. If the spinal irritation can be traced either to over-use or over-excitation, a first duty is to remove the cause by stopping the action, or by appropriate treatment of the irritative disease, which may be a morbid feature in spinal irritation, whether it be in the alimentary canal, or the genito-urinary tract, or elsewhere. The recognition of spinal irritation as having the nature and causes already specified, directs the observer intelligently to its causes. But, as already said, the first condition to be complied with is rest. In this way waste in the play of nutritive activities is diminished.

The second condition to be complied with is to give, by every means at command, a full supply of materials for a fresh impulse to nerve nutrition. Under this head is included, not only good feeding, but whatever is adapted to such cases in general, and to these cases in particular, in the way of tonics.

As respects irritative visceral disease, it need be scarcely said, after its existence and nature have been determined, that it calls for careful, effectual treatment. Gastric and gastro-duodenal catarrhs, irritative disease of the mucous membrane of the small intestine lower down, or of particular segments of the colon, the irritation produced by habitual constipation and consequent colic impactions, persistent disease of the

rectum, or of the uterus, vagina, bladder, or other parts of the genito-urinary tract,—all should receive special atteation. In this paper it is impracticable for me to describe the treatment adapted to each case. But it may be laid down as a law in the treatment of such casee, that unless the particular mode or kind of over-action or morbid excitation is not determined and rationally met, many of the cases are likely to remain as they have always been, among the opprobia of practical medicine.

There are two special points in the treatment of this class of cases to which I desire to direct attention. The first of these relates to the persistent use of small doses of opium, either the watery extract, or the muriate or bimeconate of morphia, antagonized in either case by correspondingly small doses of a reliable preparation of belladona, usually associated with the tonics given. The opium or preparation of its salts indicated are usually given by me without the knowledge of the patient, though not always so, and uniformly in small doses. Of the watery extract of opium, the doses given range from the twelfth to the sixth of a grain at a dose, twice daily or oftener. Of the morphia, the dose is from a thirtieth to a tenth, twice or thrice daily, in connection with other remedies, also antagonized by moderate doses of belladona, in doses ranging from the eighth to the twentieth of a grain of the solid extract. I am persuaded that but few members of the profession can be fully aware of the very great benefit to be derived from the use of opium, as just indicated, in painful affections of the nervous system. If it is properly employed I am convinced there is no danger of forming an "opium habit." In a large experience in its use by the mouth, I have not yet seen a case of the "opium habit" produced in the use of opium as just indicated. While its use does not entirely banish pain, it blunts the edge and usually inspires the patient (where it agrees) with a feeling of positive comfort, and, in many instances, actually improves nutrition.

The second point in treatment consists in the use of electricity, especially the electrical wire brush, generally using it at the positive electrode, the negative pole being at one or both feet of the patient. In connection with the local use of electricity, beginning in a very mild manner I have employed it at each sitting in a more general manner, the descending spinal current from the nape of the neck downward to the feet. In some instances, in using the electrical metallic brush, I have reversed the poles, using a mild current, thoroughly pencilled by rather rapid movements of the brush, at first, and making the movements of the brush slower as the sitting advances, directing attention chiefly, though not exclusively, to sensitive zones of the spine. These sittings have been not oftener than once a day, usually, when practicable, in the afternoon. Sometimes I have used the galvanic, at other times a fine induced current from the

second coil of a good induction machine, combined with the bodily and mental rest I have uniformly directed more or less thorough careful massage, according to the case.

Such is a simple statement of the views at which I have arrived in regard to the nature and general modes of treatment of spinal irritation. I do not for a moment claim for them the merit of novelty. But they are fruits, in no unimportant sense, of personal observation and experience.—*Journal of Nervous and Mental Disease, Oct., 1881.*

A MEMORANDUM ON VACCINATION, INOCULATION AND SMALL-POX. *

By Richard McSherry, M. D.,

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There is a strong predudice current in many minds against vaccination which is not altogether confined to the unintelligent classes. It is an unreasonable prejudice, and yet not altogether unfounded. Alarming and dangerous accidents have followed vaccination when a vitiated virus was used, and in some instances the disease conveyed by such matter was worse than the small-pox itself. The promulgation of such a fact would necessarily cause people to fear a process upon their own persons, or upon their children so capable of doing them serious injury.

It is true such accidents have very rarely happened, not once, perhaps, in a thousand persons, yet as they have happened, why not occur again, and why not in the one subject cognizant of them and dreading them?

The physician can only respond to such apprehension that the dreaded accidents can always be averted by sufficient care in the selection of the virus, and in the method of application.

In my practice I never saw, but once, alarming symptoms follow in the numerous or rather innumerable vaccinations performed in a long series of years The exceptional case was in a season of small-pox panic, and the allegation ran that many persons had been poisoned by bad virus I was using at the time a scab in which I had perfect confidence, and with a portion of it I vaccinated a gentleman in active business, who had been pretty well charged with brandy, though never drunk for many years. In the course of a week his whole arm was immensely swollen,

* Read before the Baltimore Academy of Medicine, December 20, 1881.

and then dark discolorations appeared so that I apprehended gangrenous erysipelas. It did not occur, however, and in due time, though slowly. he recovered. I vaccinated his wife at the same time with the same matter. She took it regularly and rightly, and had no trouble whatever. But for this circumstance, my patient though a personal friend, and his wife, and probably others would have attributed all the unfavorable symptoms to the quality of the virus, which, however, was perfectly good, the fault being in the condition of the subject and not in the condition of the matter.

Nothing does good but what may also do harm, says a Latin poet—"*Nil prodest, quod non lædere possit idem*" (Ovid), which is a truism usually, but vaccination seems quite harmless with the exceptions granted.

With good virus and a good subject there is nothing to fear. But humanized virus may be contaminated with a modicum of syphilitic or other vitiated blood; and even bovine virus may carry with it matter for tuberculous infection. A medical friend recently showed me ivory points charged with virus and also stained with blood. For obvious reasons such points or quills are objectionable. The experiments upon tuberculous inoculation quite suffice to show the danger of passing blood which might transmit infection either from its original source or from changes undergone from subsequent exposure.

As it would be criminal to take matter from a syphilitic or otherwise diseased subject for propagation, so it would be equally so to take it from a calf with a possible tuberculous or other disease. Unfortunately tuberculosis is not very rare among horned cattle, especially among the stable-fed, in contradistinction to those living in the open air. Bouchardat says nearly all the stabled milch cows near Paris become tuberculous, and would die of consumption, except that when the first symptoms appear they are promptly sold to the butcher. Bovine virus from such animals (and we have them in this country, too) would be exceedingly objectionable, and professional men cultivating and issuing bovine virus should be as careful in their selections of cattle as those watchful physicians who would never take humanized virus except from infants sound and healthy above suspicion.

All virus issued should have a reliable guarantee, and every instrument used for removing the cuticle should be thoroughly cleansed after every use and before a subsequent use. The custom of using sewing needles in this city for scratching the cuticle has manifest advantages.

With all care taken what are the advantages of vaccination? Let any one look back into old medical books and he will at once understand what a revolution has been accomplished.

Dr. Mead, a medical luminary of the last century, translated a treatise on the small-pox by the famous Arabian physician, Rhazes, who heads one of his chapters as follows:

"OF THE CAUSES OF SMALL-POX; AND HOW IT COMES TO PASS THAT NO MORTAL, EXCEPT BY CHANCE HERE AND THERE ONE ESCAPES FROM THIS DISEASE."

And in his own treatise, Dr. Mead says that while no one has it a second time, "scarce one in a thousand escaped having it once." In point of fact, wherever the small-pox appeared it swept the community like fire in a prairie, affecting and disfiguring every body and causing a very large percentage of deaths.

Dr. Mead, by the way, was among the first advocates of inoculation in England upon information said to have been derived from that adventurous traveller, Lady Mary Wortly Montagu.

When he first urged it, he was likely to be mobbed for his pains, but he had a little story to tell that brought the ladies over to his side, and made inoculation not only popular but fashionable.

The doctor found out, upon inquiry, that "this (inoculation) was the invention of the Circassians, the women of which country are said to excel in beauty, upon which account it is very common, especially among the poorer sort, to sell young girls for slaves to be carried away into the neighboring parts. When, therefore, it was observed that they who were seized with the distemper were in less danger both of their beauty and their life the younger they were, they continued this way of affecting the body so that the merchandise might bring the greater profit."

The English ladies took the hint, having also regard for life and beauty, for in those days ectrotic treatment was not a success, and the disease taken in the natural way disfigured the lady for life, if, indeed, she survived the attack.

Sometimes we see boils and swellings, and eczematous and erythematous eruptions following vaccination, and the same took place after inoculation, occasionally, due no doubt to the condition of the subject, though great pains were taken to prepare persons, by hygienic management, for inoculation.

Speaking of ectrotic treatment, various authors assert that the total exclusion of air from the surface prevents pustulation; how, then, can pustulation ever occur in the fœtus in utero? I have never met a practitioner who had *seen* such a case, though all had read of them.

Dr. Mead, for one, asserts that he remembered well a case where a pregnant woman attended her husband during an attack of small-pox, who did not take the disease herself, but at full term she was delivered of a dead child. "The dead body of the infant was a horrid sight, being all

over covered with the pustules, a manifest sign that it died of the disease before it was brought into the world." Could he have mistaken any marks of putrescence in the skin for proper pustules? "This I will add," he says further on, "that an infant in the womb may have the good luck to go through the disease, and yet the marks be quite effaced before the birth. He quotes Mauriceau, who was himself said to have been born with the pock marks, to sustain his statement. But is it not probable, or almost certain that the marks, instead of being effaced, never existed, although the child did pass through the disease in utero, and enjoy immunity ever after?

Such children were no doubt the rare exception to contracting the disease in past ages during the frightful epidemic then so prevalent and so disastrous.

Whether true pustulation can occur in the fœtus in utero I would like to hear from some practitioner who speaks from personal and ocular observation.

Addendum.—Dr. Steuart, our city Health Commissioner, stated, after the reading of this paper, that his father had often spoken of a case seen by himself of an infant born with the pustules. We cannot learn now, however, whether these were definate pustules or mere ulcerations.

Dr. Steuart, in reply to a question, said that thirty-one cases of small-pox had been reported during this season to the Health Department, with ten deaths.

This shows a striking contrast with results after inoculation. Dr. Mead says that among the properly prepared there was not over one death to one hundred inoculations. By the apparent ratio of deaths as exhibited in this city and at this time, if the small-pox had made its invasion here upon an *unprotected* population, the mortality would have been instead of ten, not less than *one hundred thousand.* This surely indicates some progress in medicine.—*Maryland Medical Journal.*

PROCEDENTIA UTERI—MARTIN'S OPERATION.*

By P. V. Schenck, M. D.,

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Surgery is complete as it restores lost functions, as it reduces dislocations, as it readjusts fractured fragments. The province of our calling is to assist nature in her efforts to repair her injuries, and to replace in their proper order the broken walls. Disease will always present an extensive field for the exercise of intelligent ingenuity. In the search after truth, thought often runs in circuit, we consider we espy new facts, when they are old; enter new fields, when they only lack the cultivation they once had. To find the cause of disease and remove it, is the talismanic order of our profession.

The female pelvis, with its special surroundings and contents, was the last and greatest work of the Sovereign of the universe. Its very creation, the necessity of which completed the perfection of the Garden of Eden, was to satisfy that part of the work which displeased the Creator with his own creative results. The pelvis, composed of the last bones to be completely formed, the basin best suited for the difficulties implied in maternity. Within this the uterus and appendages find protection and accommodation; within this cavity processes go on—the most wonderful in nature—processes which relight the lamp of life, which continue the stream of human existence.

The womb is suspended by a most ingenious contrivance, and there is no precise point which can be accepted as its normal position. No organ possesses so great mobility; it is without damage pushed up by an introit member, and may safely be pulled down by a tenaculum. It is protected from concussion or shock by padding tissue, by the water-bag in front and the soft rectal contents at the side and behind. It has an antero-posterior inclination, is movable antero-posteriorly, and is largely dependent upon the condition of the surrounding pelvic organs. It is an erectile organ, as shown by Rouget; and Wenrick has shown there is a true erection in the lower portion.

The vagina in direction is nearly coincident with the axis of the

* Read before the St. Louis Medico-Chriurgical Society, Dec. 14, 1881.

inferior strait; the anterior wall rests upon and is supported by the posterior; the collapsed walls assume the shape of the letter H. In its course it is a double curve; the cervix uteri rests upon a depression in its upper part. The folds or rugæ contain a plexus of large veins; the connective tissue between these vessels includes bundles of unstriped muscular cells, an arrangement similar to a cavernous tissue. The muscular coat consists of an inner circular and an outer longitudinal stratum of bundles of unstriped muscular cells; there are oblique bundles passing from one layer to another; between these bundles there is a large amount of connective tissue, and outside there is also connective tissue. These rugæ meet in the vertical branches of the form of the vagina. They are larger in the posterior than in the anterior wall, and are supported by the network of connective tissue forming the columna. The base of the vagina is formed of connective tissue, and a body named by Savage, perineal. The muscles of the perineum are the sphincter ani, the constrictor vaginæ, the ischio-cavernosus and the transversalis perinei. When the perineal structures meet, they fuse by an accession of elastic tissue and form the perineal body.

Now, what are the sustaining powers of the uterus? Dr. Ashwell says that, from the anatomy of the parts, we can scarcely attribute any retaining or holding power to the uterine ligiments; while Blundell lays great stress on the retaining power of the broad ligaments, and Davis sees no power except in what he calls the suspensory ligaments. Dewees said the uterine ligaments so ill perform the office of supporting the womb that it is doubtful whether such was the express intention of nature in their formation. Parr said that, from a clinical view, he could not say that the broad ligaments supported the womb; Savage looks upon the ligaments as the chief sustaining power. On the other hand, Churchill and Dewees considered the vagina as the supporting power. Emmet says, if the vagina is in a state of healthy contractility, it will sustain the uterus *in situ*. Barnes illustrates the contractile power of the vagina holding the womb, by the closure of it behind the speculum as it is withdrawn and returns to its normal columnar state; the curved vagina increases its power to hold up the uterus; the muscular posterior wall increases the vaginal power of support. Thomas says, so long as the vagina is normal in volume and weight, and remains within the pelvis with its walls in apposition, it constitutes, by its ante-cervical projection, a uterine support. Now, what supports the vagina? The anterior side of the perineal body supports the inferior wall of the vagina, and the anterior wall is sustained by the posterior wall. The perineal body, as shown by Savage, is to the pelvic viscera as the keystone of an arch; the sides of the arch are the anterior rectal and the posterior vaginal walls.

In addition to the counective tissue and the uterine supports already given, Thomas lays stress upon what he calls the retentive power of the abdomen. There can be no doubt in regard to this power. All the cavities, all the hollow organs possess it. Hence, we have the retentive power in the stomach; and in the heart, and in the womb itself, we have a retentive as well as an expulsive power. But there is about the abdomen a retentive power not included in this distinction. There is an adaptation of one part to another, a mutual fitting, a sort of dovetail arrangement. Besides this, all the organs in this cavity, even that which is an encroachment, whose presence is a sort of indentation, all these parts need something to produce friction. A muscular exercise, a species of massage, the constant moving of healthy muscles, the air pump arrangement of the diaphragm, the expansion and contraction of the abdominal muscles, all these things are to keep life in the intestines, uterus, etc., and to exercise a retentive control. The uterus was not inserted into the abdomen without some wise purpose on account of the surroundings.

The abdominal cavity, above all others, needs a retentive power, and the great increase in the size of the womb during pregnancy is the most urgent cause. But the vagina is not an idle appendage to this pneumatic and mechanical arrangement; it helps hold that organ whose functions extend from now into the eternity of the future, which functions render it so liable to disturbance and disease, that it has to be carefully held in its required position between the inner and outer world. The vagina rests upon the perineal base; it has its own columns and beams. The diaphragm with its piston action, the abdominal walls forming the cylinder, the womb and its surroundings, the movable cylinder head with its clamp formed by the perineal body, and the clamp spring formed by the walls of the vagina—such is nature's machinery. I believe the rugæ have other functions than merely being rasps and seminal dams; they are erectile valves, and as the diaphragm works they regulate the outer pressure of the air, they are trabeculæ, and with the columna do much in the support of the womb. As to this supporting power, Bennet and West assert and Savage denies. On the one hand, it is contended that the uterus will fall from its own weight; while on the other, Le Gindre says it will take from thirty to forty pounds to pull it out. Hertz cuts away the vagina, and Savage pulls it down with a vulcellum. One says it is ligamentous support, another, the connective tissue. One, that it is one set of ligaments, others, that it is another; and others again place the vagina as the only power. The truth of the whole matter is, that it is no one power. Like all things in nature, all combine to make a unity of construction.

In expressing the different degrees of the downward displacement of the womb, it makes but little difference whether we use the term prolapsus (from *prolabor*, to slip down), or procedentia (from *procido*, to fall down); these terms are purely conventional, so much so that the terms have completely changed. The old division was first *relaxio*, a bearing down, when it goes to the middle of the vagina; second, *procententia*, when it descends to the labia; and third, *prolapsus*, when it falls through the labia. The general term of falling of the womb has become too favorite a diagnosis with the careless practitioner; a fall, according to them, is almost as universal in the female sex as that which mankind inherited from Adam. They practice, as all ministers preach, on the belief that all ills are the result of the fall.

What is the cause of the uterine prolapse? There is an old feeling that all diseases of the womb are those of debility. Hodge taught that it was a feeble and irritable womb. Hohl said it was dependent upon a preceding or co-existing condition of health which gave rise to diminished vitality, and it was likely to occur when the sexual system was exhausted in consequence of age or incurable disease. Larrey, the celebrated French surgeon, called it an asthenic (debilitated) thickening of the uterine parietes and an elongation of the ligaments. Dewees put down leucorrhœa as a cause, that those debilitating discharges sapped the very foundation of the womb. There is no doubt but that in anæmic women there is often relaxation of pelvic viscera. The rapid, shallow breathing to compensate for imperfection of oxidation of the blood interferes with the massage, with the retentive power; when nutrition is interfered with, functional activity becomes exhausted. Davis puts diminished power of the suspensory ligaments. Churchill says the broad and round ligaments have no share in the production of prolapse, but the state of the vagina is the chief cause. Blundell places relaxation and debility of the vagina. In multiparous cases there may be individual idiosyncrasy, a special extensibility, a deformity of the bones of the pelvis, a large pelvis, a straight sacrum. Barker calls attention to the fact that the deviation of the vulval opening differs greatly in different women; indeed, not only has this truth struck me, but the direction, position and surrounding of this opening seem to possess almost national characteristics; and the German statistics show more cases of prolapse in the nullipara than can be furnished by any other country. Dr. Jourdan says prolapse is more frequent in thin than in fleshy women; and Ashwell says slackening and extension of the pelvic fascias is one of the essential measures to the production of prolapse. But prolapse in the nullipara is so rare that it needs no investigation. Hohl was correct in his belief that the germ of the evil was found in the pueperal condition. The old practitioners looked upon it as caused by

debility from excessive bearing down during parturition. Churchill taught that debility and relaxation of the levator ani and perineal muscles were in a great measure essential in the production of prolapse. Thomas was the first to call attention of the profession to the important bearing there was in this matter, in the fact that the vagina, uterine ligaments and perineum all grow during pregnancy, and after it they all involute. The process of involution is often interfered with in the uterus by rupture of the cervix; so it is with the vagina by rupture of the perineum; so that by rupture of the perineum and of the cervix uteri, sub-involution of vagina, uterus and uterine ligaments affords a sufficient cause for prolapse in all its degrees. It is true, there may be a laceration of the cervix uteri without any want of involution, or any of those unpleasant and constitution-breaking symptoms which generally follow in its train. So in laceration of the perineum; there may be no interference with the process of involution in the vagina, nor is the prolapsus of the uterus a necessary consequence of any kind of structural changes in the perineum caused by parturition; but it is equally certain that sub-involution does not occur unless preceded by laceration. We do not yet know enough of the laws of nutrition as involved in involution; but I believe laceration of the cervix on the one hand, and laceration of the perineum on the other, are the chief causes of sub-involution. That if only the cervix is lacerated, we are apt to have anteversion or retroversion of the womb; if the perineum is torn, prolapsus of the womb. The womb is forced by gravity, by abdominal compression; it with its surroundings are in a state of subinvolution; it lacks the vagina with its ladder-like arrangement, with its columna and its trabeculæ, its spring arrangement, its surrounding elasticity—they all lack the clamp, the base, the perineum. The rugæ disappear, the muscles become fatigued, the blood ceases to increase, the vagina is subinvoluted, the walls are relaxed, the air-valve is gone and the air let in and out, producing flatus vaginalis; that which was a support becomes a pendant weight.

What course is taken by the womb in its prolapse? Anatomy shows that the uterus in its lower third is fastened to the bladder, and the rectum fuses with the vagina quite low down; hence, the posterior wall of the vagina may prolapse without bringing down the rectum, but the anterior wall cannot prolapse without bringing down the bladder; therefore systocele is the result, not the cause of the prolapse of the vagina. Now, then, all the genital organs are fitted for procreation and the expulsion of parturition; therefore, when the womb descends, it must maintain the direction of the vaginal canal; this direction is from above downward, from behind forward. The womb maintains its normal inclination until its lower extremity reaches the pelvic floor; the cervix then describes a

curve and revolves upon the sub-pubic ligament as a pivot, following a line which is the true axis of the pelvis. This line, it should be remembered, applies itself to the soft parts as well as to the bony pelvis in prolapse; therefore, the ruptured perineum will shorten the route. As the cervix revolves around the pubic bone as a center, the fundus is directed backwards. This forward movement of the os is assisted by the bladder in its attachment. Complete procedentia cannot take place unless the uterus happens to become retroverted. What is the treatment for procedentia, or, rather, prolapse, in the third degree?

The ancients, considering that the womb possessed a separate and peculiar life, fumigated the exposed uterus with offensive substances, so that it sought to escape the foul odors and betake itself to a more agreeable location; for the same reason mice and lizards were allowed to crawl over it in the hope of frightening it. Hohl considered the only treatment consisted in remedying the defective or disordered condition of the general vital powers, or those of the uterus in particular, and the older practitioners placed their main reliance on tonics in order that the parts might recover strength to retain their natural functions, considering the predisposing cause to be that of debility, especially in the pelvic viscera. Larrey, considering the suspensory ligament at fault, cupped the loins and other adjacent parts; after this he applied a moxa to each cupped spot. Cases of curve have been reported from peritonitis; replacement of the prolapse and recumbent position of the patient have long been employed. The old directions were to place the patient in a horizontal position, with hips elevated and lower extremities flexed This treatment Burns insisted upon, while Hamilton opposed, contending it would impair the general health and increase the relaxation of the natural supports. Medical history tells us that Seranus censured Euryphon because he endeavored to cure prolapsus by suspending his patient for twenty-four hours by the feet. The next treatment was to replace the womb and keep it up by means of support. Hippocrates used wool tampons. Since which time all manner of materials and contrivances have been used, until we have passed through an age of pessaries, from the rude link in shape up to the easy chair, until in design there are as many varieties as there are differences in the human countenance. Many are shaped, better fitting the deformed mind of the inventor than the relaxed and tortuous condition of the vagina; made often more of a financial support to the contriver than as a material support to the womb; more as a reliever to his want of notoriety than for the relief of suffering womankind. A certain style of pessary has become national—the Frenchman uses Gariel's; the German uses Zwank's, and the American uses Hodge's. It would be far from me to speak ill of the production of the brain of my old teacher;

and there is no picture that comes oftener to my mind than that of Hodge sitting in the old Pennsylvania University Faculty room—a room, which, in its time, contained more professional ability than any other room in this country—and from the fire-iron frame working out in his brain the pessary which has helped his name to immortality. I would not oppose the use of the pessary, but its abuse; not its application, but its misapplication. As well might a surgeon place a crutch under the arm of each one of his patients as a gynecologist introduce a pessary into the vagina of each of his patrons. Munde says he has no doubt that complete prolapsus of not more than a few years' duration is positively cured by protracted vaginal tamponade; yet, I know of no cases in confirmation of such an idea. At the same time, he is free to admit the futility of endeavoring to cure an old prolapse by means of a supporter. Fritsch expressed a truth when he wrote that he had but little to say about pessaries for total prolapsus.

There is no doubt but that there have been cures from the mere keeping of the womb in place by support, but they are very rare. "A pessary is a truss; prolapsus is a hermia." Bateman, considering the weight of the uterus as a cause, gave large doses of ergot to produce contraction of the vaginal walls. For this purpose some used cold water injections, others tannic acid, alum—indeed, almost every vegetable and mineral astringent. Next, to produce it, they originated inflammatory conditions. Pauli used two round pessaries; De Win used a galvanic pessary; Girardeu and Langen used nitrate of silver; Courveilhier and Philips fuming nitric acid; Velpeau, Kennedy, Dieffenbach and Hamilton used the actual cantery, applied lengthwise, while Colles and Lenoir applied rings; Desgrange used an electro-caustic forceps, the blades containing the chloride of zinc; while Chipendale attempted to excite inflammation of vaginal mucous membrane by the application of gonorrheal matter. The influence of the torn perineum then demanded attention; to meet which Nunn used a perineal bandage, and Parr described specifically how to form a T bandage, and Scanzoni adds a ball to the T bandage; Beck uses a perineal pad.

What is the surgical treatment of complete prolapsus? Whitehead, Gibson, Beck and West oppose all surgical treatment. Scanzoni says the operation always fails; Courty puts it down as useless; while Chapman thinks surgical operations of benefit, and allowable only so far as they better the use of mechanical appliances; and Munde says they present a wide range of magnificent possibilities. While, on the other hand, Huguier amputates the cervix with an ecraseur; Recamier and Marjolin with a ligature; others place the woman in the neuter gender, removing both womb and ovaries; Cruvelhier opened the back wall of the vagina,

and, drawing out the uterus, excised it; Langenbuch cut across the vagina, drew out the uterus, dissected it from the perineum, and removed all except part of the fundus; while Chopin removed the whole womb. Various surgical operations have been performed for the closing, or contraction of, the vagina. Minch proposed to return the uterus to the vagina, and form an artificial hymen which would constitute a sort of diaphragm; Desgrange took folds of vaginal wall on self-closing, curved forceps, and left them on until they fell off; Billini passed a stitch in a circle around the upper part of the vaginal canal under the mucous membrane, and tightening it, in ten days a portion sloughed off and left a scar. Fricke, after giving a dire account of the ill effects of pessaries, was the first who operated for the radical cure of prolapse. He removed the posterior part of the vulva, uot including any part of the vaginal mucous membrane, and used interrupted sutures. Dewees was so shocked that he called the operation terrible, and wondered if it could be seriously proposed. Downes closed the lips by the alternate use of gold and silver rings. Kock and Geddings used the quilled suture; they removed, also, a strip of vaginal mucous membrane as well as the margin of the vulva. Dieffenbach lent his support to Fricke, and Downes opposed him. Malgaigne carried his incisions much deeper than Fricke. The operation was performed by Gerardin in France and Heming in England. Brown removed only the vaginal portion, and was one of the earlier advocates of perineorrhaphy. Savage removed a V-shaped portion of mucous membrane of vagina, uniting with quilled sutures. Thus he contended he brought together the ischio-perineal ligaments, shortening the sacro-pubic line, contracting the ano-vulval perineum, causing the posterior segment of the vagina to approach the pubis. Marion Sims operated upon the anterior wall by two transverse lines of denudation in the shape of a V; sutures are then placed over the sound tissues and under the denudation. Emmet denudes one oval place in front of the os uteri, and then a smaller space each side. Hegar makes an ovoid denudation, and on the posterior wall he turns the apex of the triangle up and the base down; the base is U-shaped; he used deep and superficial sutures. Simon makes a hexagonal denudation, and by deep and superficial sutures leaves a ridge. Bischoff displaces the uterus, so that its axis forms an acute angle with the vagina; he dissects off a tongue-shaped flap, leaving a funnel-shaped depression to be closed by stitches through the perineum. La Fort opposed the operations of Sims and Emmet; he said their operations were long and difficult; he denuded anteriorly and posteriorly; as he unites the upper sutures, he replaces the womb, thus producing a longitudinal septum in the vagina, thus making a sort of double vagina. Tracy combines a perineorrhaphy with the anterior and posterior denudation.

Winckel diminishes only the lower third; the union of the surfaces represents the letter T. Martin, of Berlin, if there be an elongation of the cervix, amputates it; he then denudes an ovoid surface on anterior wall, uniting with deep and superficial sutures; he then draws down the posteror wall, holding by ball forceps; the columna is noticed as a ridge; this ridge he circumscribes by an incision, and dissects off the flap, letting it hang down; covers the denuded surface by alternating deep and superficial sutures, bringing the edges together, the same on the other side. Next, circumscribes the (*introitus*) entrance by an incision beginning at bottom of flap running up to one-half of labia, thence along the edge of the mucus membrane to median line, ending in front of the anus; then denudes, remove the flaps already left in this denudation, puts in deep and superficial sutures.

Having been in charge of a public charity hospital especially for women, I have had a large number of cases of prolapse of the womb in the third degree to treat, and I have tried many of the operative plans proposed; and as the following has been so satisfactory in quite a number of cases in which I have employed it, I take pleasure in calling the attention of the profession to it:

If the cervix uteri be hypertrophied and elongated, and there be laceration, take (of course preparatory treatment has been already employed) a Nott's vulcellum, place it in the cervix, which draw well out and perform hystero-trachelorraphy, than replace the womb and perform Martin's posterior operation. There is no doubt but that surgical op-operations must some day take in this lesion the place of all other treatment. Localization, says Virchow, is the principle of modern medicine. By this operation the perineum is repaired, the columna and rugæ with furrows restored (all other operations cut these away); an effectual obstacle is placed so that it is impossible for the cervix to turn under the pubis, involution will go on in the vagina, and its recreative power be displayed. The cervix uteri is nominally restored, and the womb takes up the wondrous tale and continues the story of birth. You need have no fear of the anterior wall; it depends upon the posterior for support; its prolapse is the result of, not the cause of, prolapse of the womb. The dermoid condition of the vagina will rapidly change and the epidermis be replaced by soft epithelium, and thus a normal influence is spread from one pole of the sexual system to the other. The success and result of this operation is far in advance of anything we have yet had. That it is not perfect is an inducement for further study; but so far, as I believe, it is superior to any other mode, better in its success, and fails less in its failures. The growth of our science advances like nature in her development, "first the blade, then the ear, after that the full corn in

the ear." The operation in Martin's hands has been successful in eighteen cases out of twenty; in mine, in five cases out of seven. In illustration of the results I give abstracts of two clinical histories, as furnished by my medical assistant, one representing the successful one and one the non-successful class:

CASE NO. 1.—Eugene G. Hauck, M. D., reports: Mary B, aged 67, native of the United States, widow, servant; admitted to hospital July 21st, 1880, to be treated for procedentia uteri.

Catamenia appeared at the age of fourteen; always regular; no dysmenorrhea. Has had nine children; married at nineteen. Had no trouble until last pregnancy, now about thirty years ago. On the third day after confinement got up from bed, when she was seized with severe pain in abdomen and pelvis—felt sick. A physician was called, and as she states, replaced the womb, and kept her in bed several weeks. Had no trouble after this for a period of twenty years. About ten years ago trouble again began. She was frightened one day and grasped at something for support. Felt as if something gave way in the pelvis. She consulted no one for two years. During this time she suffered with a feeling of weight in pelvis, vesical and rectal tenesmus, dizziness, occasional headache, etc. States that she was operated on about eight years ago; does not know character of the operation. Had at that time not complete prolapsus. Complete prolapsus (procedentia) took place about two years later, six years ago, was gradual. She then suffered much, both as regards local trouble and general health.

Operated on by Dr. Schenck, May 13th, 1881; Martin's method was employed. Posterior vaginal wall was denuded, anterior wall was not touched; perineorrhaphy was performed. The patient was not put under the influence of ether, but was given morphine hypodermically.

In operating on posterior wall, alternate deep and superficial sutures (catgut) were used; over each was passed a perforated shot; then a piece of rubber tubing about three inches long, and then a perforated shot was passed down to distal end of tube and clamped. This method allows an easy removal of shot and superfluous catgut. Sutures were removed on the tenth day; perfect union.

October 15th —To-day, five months after operation, find uterus in position; only a slight cystocele, no rectocele. Patient feels very comfortable.

CASE No. 2. —H. G. Mudd, M. D., reports as follows: Lucinda C, aged 39, nativity United States, a widow, by occupation a cook, was admitted to hospital July 1st, 1881. Suffered from complete prolapse of the uterus (procedentia), cystocele and rectocele. General condition had; has tertiary syphilis. She gives the following history.

Neopose at fourteen; menstruation always regular, painless. Was married at eighteen. Has had four children. Last child was born January 17th, 1878. Labor easy and of short duration. Perineum ruptured in last labor. April 4th, 1878, carried a bucket of water up a flight of stairs. On reaching the top felt sick and faint, laid down for a short time, and on arising found uterus completely prolapsed. After this time did light work until she entered the hospital. During the last year has had five intermenstrual hæmorrhages; date of last, June 16th, 1881. Has menstruated regularly since the prolapse occured. Was operated on by Dr. Schenck, August 24th, 1881, Martin's method, only the posterior vaginal wall being denuded, the anterior untouched; perineorrhaphy performed. Ether was administered. Patient vomited several times during the operation. At these times it was almost impossible to hold the uterus in position, very considerable force being required. Patient suffered from constant and persistent vomiting for about thirty hours after the operation. States that she has had attacks of vomiting since childhood. An attack would last for perhaps a week at a time, continuing day and night; then vomiting would cease for a month or so. After the vomiting ceased patient improved steadily. Stitches removed on the tenth day. Perineal union perfect. Uterus in good position and showing no tendency to prolapse, even if the patient coughs. Discharged September 15th, cured.

Woman entered hospital again September 27th. Uterus still in good position, showing no tendency to prolapse, rectocele entirely cured, cystocele much improved. Discharged September 30th. Patient re-entered hospital October 13th, stating that uterus had been prolapsed and replaced. It was found, as before, in good position. It has since once been found between the second and third stages of prolapse, the cervix only presenting at the labia. Replacement was easy, as the cervix seemed to be tensely drawn back. Patient walks about and does light work.

October 19th, woman was examined thoroughly, uterus found in good position—high up. Patient was unable to force the uterus out by coughing, bearing down, etc., either while lying down or while standing, even when the cervix uteri was seized with a vulcellum, and drawn down with considerable force. Uterus has been prolapsed only the one time since patient re-entered hospital. Patient appears very anxious to have the uterus seem prolapsed, and solicitous of again being operated upon, induced, doubtless, by a disinclination to work and a desire to be supported by city charity, as she has been most of the time for several years, owing to this lesion. So that, while the result of the operation in this case cannot, perhaps, be called an entire success, it is very far from being a failure.—*St. Louis Courier of Medicine.*

EDITORIAL.

THE COUNTY HOSPITAL.

The County Hospital on the first of April, 1882, passes back into the hands of the regular physicians—or rather to the faculty of the Medical Department of the University of Denver. This is as it should be for more reasons than one.

The hospital is indispensable to the faculty of the college, in the educating, fitting and preparing of young men for the medical profession, and it is to be hoped that the medical gentlemen constituting this faculty will see to it that a proper, efficient and conscientious attending staff is organized. The resident staff should be composed of young graduates selected by a competitive examination.

The homœopaths have had charge of this institution one year, and according to their reports, they have made a good showing, but by their own admission this was not owing to the strict adherance to homœopathic principles. Let this be as it may, they are not entitled to the hospital, because it was the regular medical profession who started and have since perpetuated the hospital. It is to the regular physicians and surgeons that we are indebted for any and every advance or discovery made in the true science of medicine; and even the homœopaths have to rely on our text books. Then since we must furnish them with their knowledge of Anatomy, Physiology, Pathology, Surgery, etc., let them and all others take a back seat, or else sit at the feet of the regular profession and learn.

THE COLORADO MEDICAL JOURNAL.

The *Colorado Medical Journal* has come to a sudden termination on account of the unexpected demise of its editor, Dr. Wm. H. Warn. The first number made its appearance January 1st, 1882, and a neater, better edited little journal of forty-eight pages was perhaps never published. Except for feeble health there are none better fitted for medical journalism than was Dr. Warn. His superior education, both medical and literary, and close habits of study specially adapting him to this work.

At a special meeting of the Denver Medical Association, the following tribute to his memory was adopted:

"Your committee appointed to express the sentiments of this association upon the occasion of the death of our esteemed associate, W. H. Warn, M. D., would respectfully offer the following as a tribute to the memory of one whom we esteemed while living and whom dead we are glad to honor.

As a member of the medical profession, Dr. Warn was known and respected by the entire profession of Denver. Young, talented and active, his professional career, though short, was successful, and patients as well as professional friends will mourn his early death.

As a man among men, his sterling qualities of head and heart were of such a character as to attach him to all who knew him, and these qualities were well illustrated in his long battle with the disease to which he at last succumbed—a disease borne uncomplainingly, and a death bravely met; faithful to every trust, yet placing his beloved profession above all earthly considerations, his last days, even his last hours, almost were spent in discharging his duties to his profession, as Secretary to the State Medical Society, and editor of the journal to the establishing of which he was bending his whole life and energy. In our own sorrow at the loss we reach out the hand of sympathy to the father, mother and sister of our friend, and can offer this consolation to them, that the son and brother has left them nothing of disonor, nothing to apologize for, but rather the record of an honorable and useful life—a record of which no man need be ashamed.

Be it ordered by the society that a copy of the tribute of respect to our late co-worker, associate and friend be ordered spread upon the

minutes; that copies be handed to the press of the city for publication; also that the Secretary be requested to forward a copy of the Society's action to the family of our late professional brother, signed by each member of the Denver Medical Association."

CORRESPONDENCE.

DR. WHITEHEAD'S GAG AND HIS CLEFT PALATE CASES.

EDITORS ROCKY MOUNTAIN MEDICAL TIMES:

DEAR SIRS:—I ask the privilege to offer through your journal some remarks regarding my gag, and also concerning my connection with an operation for cleft palate, known as periosteal uranoplasty. A few words of explanation may facilitate what I have to say: Staphylorrhaphy and uranoplasty are two distinct operations; each, however, has for its object the closure of cleft palate, and each requires a complete division of the palate muscles. The first is an operation for the closure only of a bifid velum palati; the second is an operation for the closure either of a congenital cleft of the hard palate, or of a hole in the roof of the mouth, the result usually of syphilis or of scrofula. If the soft palate is perfectly intact, and there should be a defect of the palatine vault, as a hole a half inch in diameter; in order to close this hole by the operation of periosteal uranoplasty, a division of the palate muscles is required to insure the success of the operation, as much so, as if there were a complete congenital cleft of the whole palate. This division of the palate muscles paralyzes them, and prevents disturbance of the sutured part by their contraction.

Those who will take the trouble to look into the history of cleft palate in this country, will observe that I have made some more or less suncessful efforts to introduce to the favorable notice of American surgeons Langenbeck's operation for periosteal uranoplasty. Any impartial surgeon at all acquainted with this subject will, I believe, admit that I have made plain this operation and much simplified its details, especially as regards the instruments used; and that the original wire gag of Mussey was so

materially altered by me, to suit my purposes, as to deserve to bear my name, certainly as much so as any speculum or obstetric forceps or other instrument deserves to be called by the name of any particular individual. This gag which is here represented at Fig. 1, *in situ*, was copied by Geo. Tiemann & Co., of New York, from a wood-cut engraving which appeared in the *Medical Gazette*, of New York, about 1870. Fig. 2 shows the gag with wing attachments to the tongue depressor. The history of this instrument is so intimately and necessarily associated with my cleft palate cases that an allusion to them is required in this communication, as a part of the already published history of the gag. Although my operations have not been near so numerous as I would wish; and there is much that further experience would add to my knowledge of uranoplasty; yet I know of no published cases ever operated in this country by a single surgeon, that equal min in number, or surpass them in results, as regards the improvement in speech, and especially as regards the reproduction of bone in the newly formed palatine vault. My cases number eleven only; of these, one was unsuccessful. There are nine of my cases published in the following journals named in the foot-note below.* Indeed I think it would be difficult to collect as many as eight additional cases of periosteal uranoplasty, successfully operated by American surgeons and published in the United States. With the same amount of painstaking care and labor

FIG. 1.

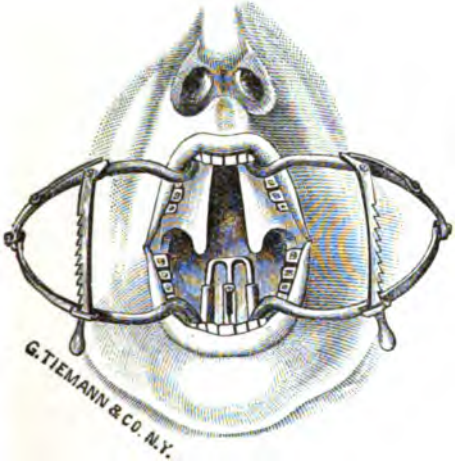


FIG. 2.

WHITEHEAD'S GAG.

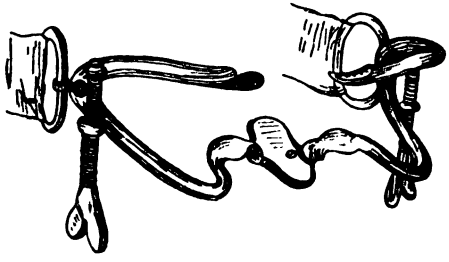
* Amer. Jour. Med. Sciences, July, 1868; N. Y. Med. Jour., April, 1869; Transact. Amer. Med. Asso., 1869, Report, Colored Illustrations; Medical Gazette of New York, 1870 or '71, tabular statement of first five cases. I have the leaf of this journal containing my article, but the rest of the Journal with its date I have not at hand. Amer. Jour. Med. Sciences, July, 1871; same Journal, Jan., 1872; Transact. State Medical Society of Colorado, 1878. Also see long article on periosteal uranoplasty, Oct., 1868, in Amer. Jour. Med. Sciences.

that I have given to the practical study of uranoplasty, there are others, who possibly might, with larger opportunities have accomplished much more than I have. The above statement therefore, about the number and results of my cases, is offered only in vindication of what I believe to be, on account of my earnest and successful efforts, my position concerning an operation which is so little understood in this country. My remarks, therefore, are certainly not intended in the spirit of egotism, and would not be if I had operated a hundred times. There are very few surgeons who rightly appreciate this remarkable operation of Langenbeck, and its equally remarkable results. In a young person, after the closure of a large cleft in the hard palate by this operation, a new growth of bone occurs in the transplanted muco-periosteal flaps, that permanently obliterates a previously wide opening in the roof of the mouth by a vital process, that is unequalled in the whole range of surgery. It is not astonishing that such a fact has been received with apparent incredulity, and opposition by some surgeons.

Periosteal uranoplasty is not more than half understood but by a very few surgeons, as the usual attempted descriptions of this operation fully attest, and misconceptions and failures are the result. I have a few times heard of this operation having been attempted, and that a signal failure was the result. From my experience of the necessity of a proper and thorough division of the levator palati, palato-pharyngeous, and palato-glossus muscles, not to mention other important details, I can readily understand, that even very prominent surgeons have, for the want of such precautions, seen within forty-eight hours the sutures cut out, and the operation prove a miserable failure. Such want of success is entirely the fault of the surgeon, and has sometimes been used to condemn the operation. It is of no use to deny that the operation is one to tax the skill and endurance of any surgeon. I once assisted a deservedly eminent surgeon and surgical author, at his request, in an operation of periosteal uranoplasty. This gentleman had successfully operated for staphylorraphy, as this case before us, operated on ten years before, abundantly attested his skill in this operation. But there remained a large opening in the hard palate, and to close this, periosteal uranoplasty was performed. After making, as he supposed, the necessary division of the palate muscles, he turned and remarked to me rather reproachfully: "You see that the flaps do not fall together as you have described." I replied that possibly he had not completely cut the palate muscles. At his request I divided completely the lavator palati on one side, and instantly the flap on that side dropped. He then divided the same muscle on the opposite side; and so far as the result of the operation was concerned, I heard that the union was complete and firm. But this gentleman complained afterward to me,

that the new palate was too tense, and that there was not the satisfactory result, as regards the speech, that he was led to expect. My experience has been, that the new palate is sometimes as tight as a drum-head; but I have generally noticed a marked improvement in the speech, and the result, in my opinion, is far preferable to the use of any mechanical device in the shape of an obturator. When the palate muscles have been thoroughly divided, and the flaps kept pressed together by the insertion, each day, of fresh lint into the side cuts so as to remove all strain at the sutures during the healing, perfect union will almost inevitably result. I have always used silver wire, and rarely remove the sutures earlier than the fourteenth day. An instructive and beautifully colored lithograph, showing the passage of the sutures and the twisting of the wire, can be seen in my report on cleft palate in the Transactions of the American Medical Association of 1869. In nearly all of my published cases, my gag is represented.

FIG. 3.



T. SMITH'S GAG.

The gag of Mr. T. Smith, of London, I once saw at Otto and Reynder's, New York surgical instrument-makers. His instrument is entirely unlike my gag, as can be seen at Fig. 3, which shows a kaolatype of the wood-cut of T. Smith's gag copied from Bryant's surgery.

In the operation of staphylorraphy, it is stated by Bryant, "that chloroform is not necessary in a patient old enough to understand the necessity of being still and assisting the surgeon. In young children with Smith's gag it is an advantage." I came near losing my second case from chloroform, and I will never use it again. I have always since used ether. If any surgeon wishes to have full control of his patient in this operation, I advise him to etherize him completely, and not rely too much on being assisted by the patient. Mr. Bryant also says, that "Mr. Tait believes, and I think rightly, that if the muco-periosteum of the hard palate be elevated with a raspatory from the semilune of the palate bone, the tendinous attachment of the tensor palati will be raised

with it, and thus paralyzed, thereby doing away with the necessity of any such division of muscles as practiced by Pollock or Ferguson, and diminishing the risk of the pin-hole orifice at the junction of the hard and soft palates." He advocates, moreover, two or more operations, viz, the hard palate to be first closed, and the soft after some months interval. Mr. Bryant further states; "perforations of the hard palate are generally due to the exfoliation of bone, and no plastic operation is of use." He recommends the use of metal, or vulcanite obturators attached to the teeth. I quote Mr. Bryant because his work is, in my opinion, an exceptionally good and practical general treatise on surgery; but I think his views on the points just quoted, are more theoretical than practical. No greater step was ever made in the success of the operation of staphyloraphy than Ferguson's division of the levator palati. Its section cannot be dispensed with; and in addition, it is required that the *muco-periosteal membrane which lines the lower part of the internal pterygoid plate*, should also be cut across or loosened, and it is also necessary to *divide the tendinous insertion of the palate muscles along the posterior border of the cleft palate bones.**

To attempt to dispense with a section of the levator palati, will sooner compromise the success of the operation than to neglect the precaution italicised by me in my article. For Mr. Tait to advocate two or more operations, *i. e.*, to close the hard palate first, and the soft palate some months later, shows that Mr. Tait does not fully understand the operation of periosteal uranoplasty, as I have plainly described it in my later articles. There is no necessity whatever of such a proceeding, because both staphyloraphy and uranoplasty can be performed at one operation, as Langenbeck and myself have both demonstrated, because to perform uranoplasty successfully, the palate muscles must be cut; and it only requires in addition the paring of the edges of the bifid velum, and additional satures to close the whole cleft at one operation.

For Mr. Bryant to say that for a closure of perforations of the hard palate, that a plastic operation is of no use, is simply to be ignorant of, or to ignore certain well-attested facts that I have proved to the contrary as well as some European continental surgeons. I have successfully closed two perforations of the hard palate, that have not been published, and a number of cases are cited in my article of Oct., 1868, in the *American Journal of the Medical Sciences*. It is but in accordance with the usual insular prejudices of Englishmen not to know what has been done in this country. If our western beef, which is admittedly

* See my article in American Journal Medical Sciences, July, 1871, and other articles previously cited.

better than the marketable English beef, is required to be sold in London as the beef of "h'old h'Ingland." It is not astonishing that some of our authors may sometimes evince a disposition to defer their good sense and judgment to the dictum of English surgeons. But these prejudices are by contact with us, diminishing, and no where so much as in Colorado, where our large English population impart wealth and solidity to our State, and on becoming somewhat Americanized, entertain for our people and we for them, the most cordial relations of mutual esteem.

A few days ago, I noticed for the first time, in a manual on operative surgery by Lewis A. Stimson, B. A , (Yale) M. D., etc., the wood-cut engraving of my gag, at page 291 of this manual, and which gag, this Dr. Stimson calls the gag of T. Smith. Not the slightest allusion is made to my cases of uranoplasty; but this is not a matter of the smallest consequence. I observe, however, that allusion is made to Langenbeck; and I notice the name of Dr. Van Buren is quoted in connection with the manner of giving an anæsthetic. Langenbeck's experience in this operation, of course, is well known; but I have failed ever to discover any recorded case of the New York surgeon's success in the operation of periosteal uranoplasty. I will say, that if about the only American literature on this subject of periosteal uranoplasty, is worthy of a place in the *American Journal of the Medical Sciences*, New York *Medical Journal*, and *Transactions of the American Medical Association*, this literature was worthy of sufficient notice to avoid an intelligent writer, calling my gag T. Smith's gag. As I have stated, my gag is shown in the reports of my cases. It is evident from the name of G. Tiemann & Co. on the wood-cut of this gag, that this wood-cut was borrowed by Dr. Stimson for his manual. Tiemann & Co. could have informed him, that the gag is published by them in their catalogue as Whitehead's gag.

The Armamentarium Chirurgicum of this firm, as the most considerable American work of the kind, would, one would think, be a useful book, and an authority for a compiler of a manual on such a subject as operative surgery. If Dr. Stimson ever saw Prof. S. D. Gross' grand work on surgery, he might have seen that the identical wood-cut which he copies is shown in this work, and the instrument designated as Whitehead's gag. Suppose the mistake was inadvertently made; it is quite reasonable to suppose, also, that it would be soon detected by one who was supposed to be competent to write a manual on operative surgery; and if to the qualities of a competent surgeon, he united those of a just man and gentleman, that he would not let three or four years elapse, and fail to make some public acknowledgement of his error. I cannot conceive how any intelligent surgeon, writing a book on operative surgery, could make such a stupid blunder The only apparent or probable explanation, is that of

stupid ignorance or inexcusable carelessness; but a possible explanation is that of some motive, as the individual influence of a *prejudiced preceptor*, thus basely and complaisantly manifested, and unworthy of an honorable physician. As I am entirely unacquainted with Dr. Stimson, I must necessarily attribute his mistake to ignorance or carelessness; which, however, is an unavoidable reflection on his intelligence, in order to *shield* him from the imputation of a dishonorable motive.

About ten years ago, Dr. J. Solis Cohen, of Philadelphia also borrowed the same wood-cut of Tiemann & Co., and published my gag in his book on Diseases of the Larynx as "Elsberg's" gag. A letter from me in the *Medical Record*, of New York, August 15th, 1872, corrected as far as a letter can, what I have always believed to be a most unscrupulous act on the part of Dr. Cohen. About four years ago, while in Paris, M. Luer, the surgical instrument maker, requested to show me the American gag, as he called it, of M. Whitehead. But some weeks later, while in London at Messrs. Weiss', in the Strand, buying some surgical instruments, I saw my gag, and asked if it was made by Weiss. The reply was that it was a French gag that they had lately imported. This last circumstance is cited to show how little the profession or instrument-makers are supposed to know, or care about who is the inventor of any particular instrument. And so far as this gag is concerned I expect it to share this fate, and little care if it does, although there is no instrument that has rendered me more valuable service. But the main point in this letter is one of professional equity, and not the mere question of a gag. I do not wish to attach undue importance to such a thing, or anything else that I may believe that I have invented or discovered, or have ever done, that may be worthy of consideration.

The question of priority is, however, one of importance as affecting the labors of earnest workers in surgical science in the future as well as at the present time. If it is proper to apply to any surgical instrument or appliance the name of its inventor; then for the encouragement of those who are to come hereafter, I believe it desirable that such careless, stupid, or intentional acts of the kind alluded to above, should meet with proper rebuke from all gentlemen of the medical profession, who scorn the protection of patent right, and who prefer to trust to an *entente cordiale* to protect the rights of medical authors and of surgeons. And towards this effort, I hope that you, and your medical exchanges, and also all right-minded members of an honorable profession, without reference to any particular claims to priority, will lend your aid.

Very Respectfully Yours,

W. R. WHITEHEAD.

Denver, Colorado, January 10th, 1882.

COMIC HISTORY OF THE VALVULA BAUHINI.

EDITORS ROCKY MOUNTAIN MEDICAL TIMES:

It was entertaining and instructive to read Dr. Labrie's translation of the history of the ileo-cœcal valve, discovered by Bauhin, and named after him. There is a comic history to this valve that may possibly amuse your readers. This history is certainly traditional in France, and possibly may be duly authenticated and recorded, and would furnish material for a short comedy or opera bouffe.

The valvula Bauhini or *valvule de Bauhin*, has for centuries been known in Paris as the *barriere des Apothecaires*, or the apothecaries barrier. Ludovic Hirschfeld, the anatomist, whose splendid illustrated work on the nervous system is so well known, never let an opportunity pass to mention the *barriere des apothecaires*, and the reason why it received this name.

It may be necessary to explain, that, during, and long subsequent to the time of Bauhin, when a physician ordered a clyster to be administered, it was the custom for the apothecary, supplied with an old-fashioned pewter syringe of formidable size, to repair to the patient's house, and *secundem artem*, or otherwise, discharge the contents of his syringe into the lower bowel of the patient.

This seems to be a well-known fact in France, and the traditional history of this fact is preserved not only by word of mouth, but there has been an attempt to perpetuate it by certain little porcelain figures most artistically made, and which represent the apothecary of the olden time with a huge, old-fashioned syringe suspended by a strap from his left side, after the manner of wearing the sword or other weapon.

It is very necessary to be thus particular, because some malevolently disposed person might, in the interest of the apothecaries, endeavor to discredit this statement and try to bring unseemly disgrace on the writer as not being a conscientious chronicler of the history of *Valvula Bauhini*.

The writer is more sensible of this, when he reflects upon some of the perversions of history. It has even been vaguely hinted that the Puritans never landed on a rock, hut got stuck in the mud before setting foot on land; that Pochahontas was not a lovely Indian maiden, but an ugly old squaw, and that she did not save Captain Smith's life.

Let us return to the subject of the administration of clysters in connection with the function of the valve. Evidently the apothecaries of the olden time must have taken a commendable pride in the performance of this so universally acknowledged duty. The syringes must have been of extraordinary capacity, otherwise we should not have known of the *valvula Bauhini* by the name of the apothecary's barrier. The medical

men of Bauhin's time, and subsequently, received with unmistakable pleasure the discovery of this valve and its peculiar function, as the familiar and suggestive name of *barriere des apothicaires* would imply. As soon as it was generally understood by the profession that this valve offered a barrier to the passage of fluids, solids and even gases from the large into the small intestine, and that therefore there was a limit to the quantity of fluid, that the apothecary could squirt in this direction, there was a general feeling of satisfaction among the doctors, as denoted by the expressive name given to the ileo-cœcal valve. It is observed that some of the best historians are latitudinarian in their descriptions, and therefore the writer will simply avail himself of the most highly esteemed prerogative of this class of writers. We will suppose that Ambroise Pare has ordered a clyster for Charles IX, and the most considerable personage among apothecaries, the *apothicaire du Roi*, is proceeding through the narrow, winding, slime-covered street of old Paris, the *rue Saint Andre des Arts*, and is suddenly met on the narrow *trottoit* by a haughty cavalier. The *apothicaire du Roi* has the narrow sidewalk, is ponderously equipped with a huge pewter syringe, which he carries with the muzzle elevated. The cavalier demands the *trottoit*. An altercation ensues. The cavalier unsheaths his long rapier to attack. The apothecary brings his syringe in position ready for action, and prepares to discharge his weapon. The cavalier, suddenly realizing the unequal character of the contest, precipitately retires in great consternation, and the *apothicaire du Roi* has gained a victory.

He and most of the apothecaries of Paris were undoubtedly men of spirit, because they were Frenchmen. They were proudly conscious of the general, and even the most intimate relations which they bore to society, in the matter of clysters.

Imagine one of our "tony" Denver apothecaries,—beg pardon, I mean pharmaceutists, with the ancient implement of his calling, and ready to administer a clyster on prescription from a doctor—Whew! This is all changed, bless your life! We manage things better now. The pharmaceutist often himself prescribes across his counter, and vends his pills, big ones, and little ones, to suit his customers. The professional relations of the physician, and modern pharmaceutist are of the nature of the most perfect equality, as they should be in this enlightened age. There is a mutual self-respect and manly cordiality existing between them, and if this little historic pleasantry is written about the apothecaries, the writer is not ignorant of some of the many queer things that might be told about the doctors also.

X. C. I.

REPORT ON PROGRESS IN DISEASES OF CHILDREN.

By Milo A. Wilson, M. D.

Infantile Hydrocele.—Clinic of Prof. D. Hayes Agnew, *Medical and Surgical Reporter.*—Here is another swelling occurring in a child two years old, which also stands out prominently from the body. The child's crying assists us in the diagnosis, for, if simply a hydrocele, the distension will not increase when he cries It is irreducible. Congenital hydrocele is a rare affection, although it is stated in some books to be very common. In this form of the disease the *tunica vaginalis* is often not sharply separated from the abdominal cavity, but it is continuous with it. The investing prolongation of the peritoneum adheres sufficiently close to the cord, in most instances, to allow only of the accumulation of the fluid which constitutes the hydrocele; intestines and omentum do not usually descend.

In congenital hydrocele, injections would be dangerous because of the continuity of the vaginal tunic with the abdominal cavity. The patient might perish from the consequent inflammation. It may be treated by several methods. You may use the expectant plan. It is not uncommon in young children for the fluid to be absorbed. Applications of solutions of iodine or muriate of ammonia may aid the process. Again, you may treat the hydrocele by puncturing it with a sharp pointed bistoury and evacuating the fluid. After this a portion of the *tunica vaginalis* should be siezed with the forceps, drawn through the wound and snipped off with a pair of scissors Finally it may be treated with the seton. This is a method which I regard as very satisfactory, and is applicable to all varieties of the disease. I will employ it in this case. I puncture the sac with a sharp-pointed bistoury, and along the blade of the instrument I introduce a needle armed with a single silk thread, and I bring it out through the skin of the scrotum. The knife-blade makes an excellent dissector and we are sure of getting into the sac.

One loop of the seton is abundant, it serves to drain away the serum and to develop sufficient inflammation to cure the disease. The thread should never be allowed to remain in over thirty-six hours, for it might be followed by an abscess. We will tie the silk with a large loop, in order to allow for the swelling that will follow.—*Obstetric Gazette.*

Infantile Hernia.—Mr. Osborne, F. R. C. S. E., has repeatedly met with cases of infantile hernia connected with phimosis, and which he

is certain were caused by the phimosis. The vaginal process of the peritoneum through which the testicles decend, will easily give way under the strain used to overcome the obstruction to the flow of the urine. He even thinks that the hernia usually occurs on the side on which the testicle was the last to descend, which would account for its greater frequency on the right side. If a single truss is used, and the phimosis not relieved, the rupture will often appear on the other side, thus forming a double rupture. —*London Lancet.—Southern Clinic.*

HERNIA OF THE CÆCUM.—ACQUIRED.—INFANT BUT EIGHT MONTHS OLD.— STRANGULATION.—DEATH.—As *acquired* hernia in infancy is exceedingly uncommon, in fact not mentioned in some standard works, for the reason that such conditions are almost always congenital, I have thought that the case about to be given below, merited further notice. It was reported in the *New York Medical Record* for August 2nd, 1879, and was presented by Prof. J. Lewis Smith before the New York Pathological Society. May 14, 1879. I take it verbatim from the *Record* of that date.

"The specimen was removed from the body of a male infant, who died at the age of eight months. He was well nourished and in good health till Friday, May 9th, when he became very fretful, as if in pain, and during the day the nurse observed unusual prominence in the right inguinal region. One healthy stool occured on the 9th. On the 10th he continued fretful, had no stool, and several times vomited a greenish substance. A dose of castor oil was administered, which was, however, vomited. The inguinal tumor continued as before, unless somewhat more prominent. On the 11th the condition was the same, except increasing weakness. Lime-water was administered by the attendants to relieve the frequent vomiting, but with no effect.

On the 12th he was rapidly sinking, and the nurse, now fully alarmed, brought him in the latter part of the day to the Dispensary of the New York Foundling Asylum, where Dr. Milo A. Wilson, who was in attendance, at once recognized the nature of the malady, and sent him into the institution.

Dr. Chadbourne, the resident physician, immediately examined the case, and made the following record: "Infant in collapse; limbs cold, face cool, features pinched, and eyes sunken; the tumor extends from the right inquinal region, to the lower part of the scrotum. It has a dusky color from the congested vessels underneath the chin; pulse feeble and quick; rectal temperature, 104 1-5°; respiration, 80; the vomiting has ceased, and there is apparently but little suffering in consequence of the collapsed state."

At 8 p. m., at the time of my visit at the institution, the patient was lying quietly on his back, the extremities cold, the pulse with difficulty counted on account of its rapidity and feebleness, but numbering about 180; rectal temperature, 105½°; respiration 80; the features pinched, presenting the moribund appearance. The tumor could be handled without apparent pain on account of the low vitality. Having elevated the hips of the infant, an attempt to reduce the hernia by taxis was made The testicle could be felt in the bottom of the scrotum, and the displaced intestine could be made to recede from it, to the distance perhaps of one and a half inches; but manipulation and pressure to the extent which seemed prudent, although it diminished the apparent size of the tumor by crowding it against the ring, did not seem to produce any effect on the constriction. The displaced intestine could be felt within its scrotal covering, soft, flabby, and without contents. It was deemed best, in the prostrated state of the patient to apply cold to the tumor, and to stimulate actively by brandy during the night; but three hours later, at 12 p. m., clonic convulsions occurred, which terminated fatally at 5 a. m. During the night the patient had five stools.

At the post-mortem examination, made a few hours after death, the small intestines were found distended chiefly with gas, and there was a small amount of serum in the abdominal cavity. The protruded portion of the intestine was the entire cæcum, and nothing else. The attached end of the *appendix vermiformis* was drawn within or against the ring, the body of this *cul-de-sac* lying above in the abdominal cavity. The ileo-cœcal valve was also drawn down, so as to lie against, or perhaps just within the ring. The cæcum had a dusky red appearance in consequence of the congestion, and one portion of the size of a ten-cent-piece was dark, as if from commencing gangrene. Subsequent examination, however, showed that there was no gangrene, nor was any offensive odor noticed. There was no fæcal substance or gas in the cæcum.

The points of interest were the following:

1st. This was obviously a case of acquired hernia. The fact that no protrusion occurred till the age of eight months, certainly forbade our regarding the hernia as congenital. In hernia, which we may properly regard as congenital, the escape of the intestine through the ring occurs in the first weeks of life; and from cases of this kind, which have been observed, even those much neglected, it appears that strangulation is rare. For, if the aperture is so patulous as to allow protrusion at this early age, when there is little expulsive effort, and the position is usually recumbent, the return of the intestine by taxis is also easy. Dr. Smith had not met a case, which seemed to be congenital, which he could not reduce. On the other hand, acquired hernia in the infant, like that in the adult, is

liable to strangulation, and it therefore requires prompt treatment. The cause of the unsuccessful result of taxis in the above case was apparent at the autopsy. The large size of the cæcum, its feebler peristaltic and vermicular movement, as compared with that of the small intestine, which movement greatly aids in the reduction when the hips are elevated, and the impaction at the end of the *appendix vermiformis*, and perhaps also of the ileo-cœcal valve in the aperture, through which the protrusion occurred, afforded sufficient explanation of the persistence of the rupture and its strangulation.

2nd. From the few post-mortem examinations which he had made in cases of infantile hernia, which had been chiefly congenital, death having occurred from other causes, Dr. Smith believes that the large intestine is much more frequently the part which protrudes in infantile, than in adult cases.

3rd. Constipation was not so prominent a symptom as it usually is in strangulated hernia. Total constipation was present only during two days, and on the last day after the manipulation there were five stools. This was explained by the fact that the ileum was free, and the ileo-cœcal valve was barely engaged. The five stools in the last hours of life might, it was true, have occurred from fæcal matter which was already in the colon, or the ileo-cœcal orifice might have been raised sufficiently above the ring by the taxis to allow fæcal matter to pass. We could see by this case how strangulation and gangrene might occur in hernia, without obstructing the passage of fæcal matter, provided that only the cæcum is engaged."

Case of Small Pox Aborted by Vaccination.—Dr. E. J. Moseley, Richmond, Virginia, writes:

On the thirty-first day of August I was called to see a child, about fourteen months of age, in a family, all of whom had been vaccinated except this child. The family refused this protection for fear the little thing's arm would be very sore. Upon examination I was certain that it was variola. I considered the chances for this child's life very small, being satisfied of my diagnosis, and urged, as the best possible measure for its safety, immediate vaccination, which was performed at once and successfully. On the next day my diagnosis was fully confirmed. The eruption, instead of going through the usual stages, was milder and distinct, though running the course of a very mild attack. The vaccination evidently impressed the system, and influenced and modified the course of this disease, reducing it to a minimum of danger. Not another case occurred in this family. The child contracted the disease from a family on the opposite side of the street, where several deaths occurred.—*Southern Clinic*, September, 1881.

A CASE OF MYSOPHOBIA.—Dr. J. C. Shaw, *Archives of Medicine*, reports as follows:

E. J., male, aged 15 years, brought to me by his mother on May 26th, 1879. For the past few years has enjoyed good health. About six weeks ago the first decided symptoms appeared; but for months before his mother had noticed that he was excessively particular to wash his hands very clean, which is unusual for boys, as she remarked. About six weeks ago he began to say to her: "He had been touching the paint; did she think it could come off the wall and poison him?" He would not take off his own hat, but ask her to do it for him; also to unbutton his coat. If he wished to come in the front door, he would not take out his night-key and come in, but would knock on the door with his elbow. He is afraid that if he touches anything with his hands it will poison him; every time he touches *anything* he is very particular to wash his hands very clean. He spat on the carpet a few days ago, and then rubbed it off with his boot; he immediately came down stairs to his mother, told her about it, and asked if she thought he could have got any of the color off the carpet so as to poison him. He would go about holding his hands and arms away from his body, as if he were afraid of touching his clothes. When he goes to bed at night, he will wash his hands a dozen times and use as many towels; if prevented from doing this, he appears disturbed, and will sometimes rush over to the water-pitcher and thrust his hands in, which appears to satisfy him. For a short time past he has frequently asked his mother if he had cob-webs on his face, and especially about his mouth. His mother thinks that of late he has presented a vacant, idiotic expression that he never used to have. When the boy is talked to, he speaks sensibly, but will give no explanation of why he is afraid of being poisoned by touching things; says he has frontal headache at times, especially when he goes to school; for the past six weeks has not gone to school, and has not had the headache, but a few days ago, had a sharp pain in left occipital region. He looks dull and apathetic; is not given to self-abuse. He has a decided neurotic family history; the brother and father of his mother suffer from some nervous disorder, but no accurate account of it could be obtained; but I infer that it is a mental disorder. The marked neurotic family history in this case inclines me to the opinion that graver mental disorder will be developed in this boy.

Mysophobia was first described by Dr. Wm. A. Hammond in 1879, (*Neurological Contributions*, Vol. 1, p. 40), a few months previous to my seeing the above case. Dr. E. C. Seguin has since reported a case. —*Archives of Medicine*, August, 1880.

HYDROTHERAPHY IN CHILDHOOD.—Dr. Lederer read a paper on this subject. He had nothing new or rare to offer, but thought if physicians would overcome their own fears of the treatment, they could introduce it into their practice. It is a striking fact that physicians who use narcotics, chloral, hypodermic injections and electricity with boldness, are frightened at the moderate use of a means better under their control than either of the above. In 1804 and 1810, Hubertus and Frohlich of Vienna, treated a large number of cases of scarlatina by this method, to the exclusion of all other medication. And in 1821, Harder had used it with success in scarlatina and in croup, saving his own child who had been given up to die.

Methodical hydrotherapy, supported on physiological principles, allows of as much variations, regarding age, duration, repetition, temperature, etc., in its use as do other remedies. The great tendency of children to reflexes, the tenderness and irritability of their skin, favor the use of water, while demanding foresight lest too low a temperature might call up excessive reaction, etc.

Hydrotherapy makes its greatest conquests in adults in chronic diseases; but the reverse is true with children. It is not appropriate for nurslings, the irritability of their skin being increased by warm baths, warm rooms and coverings.

But these observations refer only to croup and scarlatina and they (nurslings)are not so liable to these diseases. In brain diseases, hyperæmia is best treated by local applications. The best results were obtained in the initial stages of scarlatina, but later on in croup.—*The Section for Pædotrophy of the German Society of Natural Sciences.* Translated by Dr. M. Stanton, *Obstetrical Gazette*, Dec., 1881.

EFFECTS OF TOBACCO ON THE FŒTUS AND NEW BORN.—Dr. Jacquemart reports in *Paris Medicale* the following: A strong, well-built woman had had several normal births before she began to work in a tobacco factory, after which time she gave birth to two children who died immediately after birth, nicotine being found in the amniotic fluid each time. Another woman bore three children within five years, the first one living but eight days, the second one died during labor, the third one lived a month. Nicotine was found in the amniotic fluid in each case. Still another bore five times in eleven years, the children dying a few days after birth. In one hundred such cases he found 40 per cent abortions and premature births, 15 per cent deaths, among the children within a few hours or days after birth.

The mortality of such of these infants as were suckled by their own mothers, was 10 per cent greater than it was among those nursed by strangers.—*Ibid.*

NERVOUS DIARRHŒA OF CHILDREN.—In an article published some months since on "Diarrhœa in the Young," etc., I mentioned as one variety that of nervous diarrhœa. I believed then, and it has since been verified by me, that the nervous system of many children, particularly those between the ages of 5 and 10, becomes so influenced by certain deleterious causes, as to create an amount of nervous irritation, the result of which is diarrhœa, just as we often see chorea and other nervous troubles brought about. Amongst the causes producing this condition, I have noticed over-fatigue of mind, improper home training, poor hygienic regulations and hereditary influences. When such a child is first seen, the following history will generally be elicited: the child has looked pale and careworn for some days, is very nervous, restless, sleeps badly, has lost flesh, has a constant desire to go to stool during the day, besides having 3 or 4 evacuations through the night. Further inquiry will show that it sometimes has headache while awake, frequently grits its teeth when asleep. (I have often had my attention called to this habit in nervous adults.) In these children the abdomen is found free from pain, not unusually large, there is no fever as proven by the thermometer, although the skin is dry and rough. The heart and lungs are found to be normal, with exception of such functional cardiac disturbance as palpitation.

In the diagnosis of this form of diarrhœa, rectal irritation consequent upon piles or dysentery must be considered; but a careful examination of the rectum, and inquiry relative to a previous attack of dysentery, will decide these points. Again, some of the symptoms, taken together with the grinding of the teeth, might lead us to suspect worms; but as these, together with the many other symptoms given in the books, go for naught in my opinion, such a decision should not be too hastily made. The following from a number of other cases, will illustrate what I term nervous diarrhœa:

Ellen G, 5½ years old, Irish decent, parents living and of a nervous temperament. First seen, 2 P. M., May 9th, 1881; has been going to a private school for the past six months and seemed in good health up to ten days ago; since then, is very nervous and often complains of feeling tired; has had loose passages for four days and nights; goes to stool often without having the desired effect; sleeps badly and grits her teeth when asleep. Has lost flesh—present weight, 35 lbs., five pounds less than it was one month ago. The child looks pale and badly nourished, abdomen not tumid nor tender upon pressure, lungs healthy, also heart, but very much excited; temperature normal, skin dry. Has no rectal irritation, has never been known to pass worms.

Improper food being a possible cause, castor oil and laudanum in lemon syrup was ordered; diet, milk and nutritious broths. May 10th, 9 A. M., she had had eight stools since last seen, quite healthy in appearance, free from mucus and blood.

Bismuth, laudanum and syrup of ginger in chalk mixture were now prescribed. I did not see the child again for two days, May 12th, 10 A. M., at which visit all the same symptoms were present, except that the stools were less frequent at night.

Cardiac palpitation being much complained of, the bismuth mixture was discontinued, and bromide of potassium with tincture of digitalis in elixir velerianate of ammonium given, as also tincture of iron and strychnia in elixir adjuvant. May 13th, 10 A. M., had but four stools, those during the day; sleeps better and not so nervous; continued treatment.

May 14th, 12 M.—But two stools since last seen; much more cheerful; nervousness all gone.

May 17th, 11 A. M.—Child apparently well. Stopped all former medicines, but as she had not increased in weight, I ordered comp. syr. hypophosphites, twenty drops three times daily, to be continued for a month.

June 5th.—The patient was brought to my office much improved in appearance and with a gain of eight pounds in weight.

I am thus particular as to the weight of this patient, from the fact that by careful observation of this point, whether there is a loss or gain, we have in most childrens' diseases a simple but sure means of ascertaining what progress, if any, is being made toward recovery.—Dr. William Lee, *Maryland Medical Journal*, Dec., 1881.

THE SIXTEEN COMMANDMENTS OF THE PARIS ACADEMY OF MEDICINE.—The Academy of medicine has condensed into the following sixteen propositions the most important hygienic rules for the care and management of infants. We re-produce them here with the sincere hope that all mothers and nurses will commit them to memory and observe them as faithfully as the ten commandments of Holy Writ.

I. During the *first year* the only suitable nourishment for an infant is its own mother's milk, or that of a healthy wet nurse. Suckling should be repeated every *two* hours—*less* frequently at night.

II. When it is impossible to give breast milk, either from the mother or a suitable nurse, cow's or goat's milk given tepid, reduced at first one-half by the addition of water slightly sweetened, and after a few weeks one-fourth only, is the next best substitute.

III. In giving milk to an infant, always use glass or earthen-ware vessels—not metallic ones, and always observe the most scrupulous cleanliness in their management, rinsing whatever used. Always avoid the use of teats of cloth or sponge so frequently used to appease hunger or quiet crying.

IV. Avoid carefully all these nostrums and compounds so liberally advertised as superior to natural food.

V. Never forget that artificial nourishment, whether by *nursing-bottle*, or *spoon* (without the breast), increases to an alarming degree, the chances of producing sickness and death.

VI. It is always dangerous to give an infant, especially during the first two months of its life, solid food of any kind, such as bread, cakes, meats, vegetables or fruit.

VII. Only after the *seventh* month, and when the mother's milk is not sufficient to nourish the child, should *broths* be allowed. After the first year is ended, then it is appropriate to give light broths or paps, made with milk and bread, dried flour, rice and the farinaceous articles, to prepare for weaning. A child ought not to be weaned until it has cut its first twelve or thirteen *teeth*, and then only when in perfect health.

VIII. A child should be washed and dressed every morning before being nursed or fed. In bathing a child, temper the water to the weather, carefully cleanse the body, and especially the genital organs, which require great cleanliness and care; and the head should be carefully freed from all scabs and crusts which may form. Where the belly-band is used, it should be kept on for at least one month.

IX. An infant's clothing should always be so arranged as to leave the limbs freedom of motion, and not to compress any portion of the body.

X. An infant's clothing should be studiously adapted to the weather; avoiding at all times, exposure to the injurious effects of sudden changes in temperature without proper covering; but nurseries and sleeping apartments should invariably be well ventilated.

XI. An infant should not be taken into the open air before the fifteenth day after birth, and then only in mild, fair weather.

XII. It is objectionable to have an infant sleep in the same bed either with its mother or nurse.

XIII. No mother should be in too great a hurry to have a child walk; let it crawl and accustom itself to rising on its feet by climbing on articles of furniture, or assisted by the arms of a careful attendant. Great care should be taken in the too early use of baby wagons, etc.

XIV. No trifling ailments in infants, such as colics, frequent vomiting, diarrhœa, coughs, etc., if persistent, should be neglected. A physician's advice should be at once obtained.

XV. In cases of suspected pregnancy either of mother or nurse, the child should be weaned at once.

XVI. A child ought to be vaccinated after the fifth month, or earlier should small-pox be prevalent.—Translated by Dr. D. C. Holiday, *New Orleans Medical and Surgical Journal.—The Cincinnati Lancet and Clinic*, December 24th, 1881.

PROGRESS IN OBSTETRICS AND DISEASES OF WOMEN.

Abdominal Pregnancy of Ten Years' Duration.—Recovery.—Reported by Dr. F. Paschal (*American Medical Weekly*, January 14, 1882). This extremely wonderful and marvelous case, which seems almost incredible, was a Mexican woman who called at the Doctor's office, first presenting him with a femur, scapula, and two other bones of a fœtus nine months old, and requested him to treat her for "diarrhœa." She was thirty-two years old; married when fifteen; pregnant five months later, and when at full term, as she supposed, had "labor pain," she thought, which lasted four days, but not severe; they then ceased and soon after she began to fail in health; had several abdominal pains, chills, fevers, sweats, loss of appetite, vomiting and diarrhœa. A year afterward she menstruated and continued so regularly thereafter. Ten years after her expected confinement, she expelled by the rectum, one half of the inferior maxilla, and soon after other bones. At the time she consulted the Doctor her general health was very bad. She had fever and diarrhœa. The abdomen was enlarged and a hard tumor could be plainly made out. A vaginal examination revealed the uterus in a normal condition. The three bones of the fœtus could be felt through the *cul-de-sac*. A rectal examination revealed an opening the size of a silver dollar, and the bones were easily reached, the cranial bones presenting. She was placed under chloroform, and a number of bones, by the aid of the forceps, removed through this rectal opening, and after this, during the next eight or ten days, she passed a large number of bones. The tumor disappeared as did also the diarrhœa, and complete recovery soon followed. In all two hundred and fifty bones were collected.

Extirpation of Ovaries.—Dr. N. B. Rogers (*Miss. Vall. Med. Jour.*, Nov., 1881) reports three successful cases In two cases, both ovaries were removed, in the third case, only one. In the first case, the patient was a young, white woman aged twenty, who, during five years, had suffered at first during the menstrual period, and later constantly, with severe aggravations at the menstrual period. The pain was confined at first to the left ovary, but afterward extended to the lumbar region. She had been under judicious professional care during all this time, but steadily grew worse. She had been bedridden for eight months with constant pain in both ovaries and lumbar region of the spinal cord. In view of all the symptoms, a diagnosis of oophoritis was made, and it was decided to remove the offending organs. The result of the operation was quite satisfactory. Five months after the operation she reported that she could walk a mile a day, run a sewing machine, remain up all day, and sleep well at night, but still had considerable pain in the back. Examination of the ovaries after removal confirmed the diagnosis.

The second case was that of a colored woman, aged twenty-eight, who had an abortion at six weeks, when she was twenty-two. Inflammation of some of the pelvic viscera followed, but she was up and about in a few weeks. There was excessive dyspareunia and irritability of the bladder, cystitis. Examination under anæsthesia determined that the ovaries were both displaced, and bound down by adhesions in Douglas's *cul de-sac*. There being no possibility of replacing the organs, and other methods of treatment proving unsuccessful, the removal of the ovaries was determined upon and executed. The convalescence was protracted, and at times doubtful, on account of the refractoriness of the patient. Eighty-one days after the operation she came to the doctor's office. The vaginismus, which had been very marked, had entirely disappeared, the cystic irritability had also entirely disappeared, and she was very comfortable. Both ovaries presented evidence of chronic inflammatory processes.

The third case was that of a white virgin, twenty-two years old, who had suffered for nine months attacks of extremely severe pain in the left ovary, dependent upon ovaritis, which was attributed to injuries received by a fall. The organ was removed, and, on examination, gave evidence of inflammatory processes. At the time of report the degree of success could not be stated, but there certainly had been very great relief to the suffering. All three operations were made by abdominal section.—*St. Louis Cour. of Med.*, Jan. 1882.

How to Regulate Uterine Contractions during Labor.—Dr. N. H. De Camp (*Western Medical Reporter*, October, 1881) states that, in giving the fluid extract of ergot in doses of ten to fifteen minims every fifteen

minutes, the frequency and force of the uterine contractions can be stimulated without danger of producing a tetanic condition of the uterus, such as is produced by doses of a half to one dram. He says that, when the pains have been brought to a frequency of from three to five minutes, if the force is not also increased, ergot will not do it without danger of exciting tonic or constant contractions, and then quinine should be given in ten-grain doses, which will strengthen the contraction, but will not increase their frequency.—*Ibid.*

Battey's Operation for Dysmenorrhea.—Dr. E. Malens, (*Brit. Med. Journal*, Sept. 3, 1881) in introducing a discussion in the section of obstetric medicine, at the annual meeting of the British Medical Association, in August last, referred to the treatment of dysmenorrhea by removal of the ovaries. He recognized the difficulty of distinguishing the cases where the derangement is purely functional, or, in many cases of determining whether it be the general or a local condition that is at fault. He thinks that if, after long duration of the disease, no alteration of the ovaries can be discovered, it may reasonably be doubted whether these organs are the primary orgin of the disease. Where grave doubt exists on this point, and the patient's condition is such as to warrant the risk, he recommends an exploratory incision to ascertain the condition of the ovaries. If these, or one of them, are found to be diseased, they or it, should be removed; otherwise, the incision should be closed without further interference with the ovaries.

The majority of cases, even when the ovaries are diseased, are amenable to treatment—hygienic, dietetic and medicinal; but there are some cases which defy every known treatment, to whom a hope of relief is afforded by the removal of the ovaries. As some assistance to a judgment as to the ultimate results in the cases which have been operated upon, he makes the following statement of cases, which he has collected:

	NO.	PER CENT.
Cured, - - -	68	75
Greatly benefited, - -	15	17
Not benefited, - -	7	8
	90	
Of the incomplete operations:		
Cured, - - -	3	18
Greatly benefited, - -	7	41
Not benefited, - -	7	41
	17	

(*St. Louis Courier of Medicine*, January, 1882.)

An Unusual Experience in Placenta Previa.—John Glaisler, M. B., etc., (*Edin. Med. Jour.*, October, 1881) reported to the Edinburgh Obstetrical Society, in April, 1881, five cases of placenta previa which he had met with in the course of nine months in the preceeding year. In three cases the placenta covered the internal os; in two cases it only partially did so. Four cases were delivered at full time, the fifth at five and a half months. In three cases the child was born dead; in the fourth, there were cardiac pulsations for a time, but efforts at resuscitation failed eventually. In the fifth case, the fœtus was not delivered. Two of the mothers made good recoveries, though slow; the third died of chronic phthisis four months afterwards; the fourth died suddenly about three weeks after confinement, supposed by the attending physician to be by reason of internal hemorrhage; the fifth died undelivered. In two cases, there were repeated hemorrhages before confinement, and these two made the best recoveries; in another, two severe hemorrhages; in another, one, and the fourth, there was no premonitory hemorrhage. In all the cases, the hemorrhage during labor was very profuse.—*St. Louis Cour. of Med.*, January, 1882.

Double Uterus (*Uterus Biocularis*), *Atresia of the Left Side and Gonorrhœal Affection of the Right.*—This case is reported by Dr. O. Stromski (*Chicago Medical Journal and Examiner*, January 1882). The patient, a German woman, married two years, her husband previously healthy, contracted gonorrhœa and repeatedly infected his wife, which gave rise to a severe chronic parametritis. She menstruated the first time, when fifteen years of age, without pain or other trouble. At the second menses she suffered from severe pain in suprapubic and iliac regions, and there was no flow of blood; high fever set in, and the case was regarded as a very dangerous one by the attending physician; the diagnosis was peritonitis; she soon recovered, and three months after recovery she began to menstruate regularly, and so continued for the next five years, when the same symptoms reappeared. "Retarded menstruation" was the diagnosis this time. She remained well during the next eight years, but at the end of this time the sickness reappeared twice in one year. After several relapses of the trouble, she finally came under the care of Dr. Stromski, who made a careful examination with the following result: A normal cervix, with a virginal *os externum*, was felt with the index finger *per vaginam*, pushing the finger upward to the fornix vaginæ, on the left side of this cervix a rounded body resembling exactly another but smaller cervix, was discovered, but without an opening. Between this normal cervix and the appendix there was a line of demarcation continuous through the whole uterus up to the fundus, this line distinguishable through the abdominal

walls. The right side was normal, respecting the metritical and parametritical condition, representing a normal-sized uterus; but the left was twice the size of a normal uterus, of a rounded globular-like shape, which had the appearance of a new growth springing from the side of the other body. The finger in the rectum detected the elongation of the normal cervix as a body like that of a normal uterus, but on the left side there was a thickening of the walls and an enlargement of the uterus, beginning right behind the cervix. The walls of this side of the uterus could be compressed like a bag filled with water; the woman fainted, however, whenever this was attempted. Examination by the speculum showed the endometrium to be in a state of inflammation, and greenish-white discharge coming from the os (gonorrhœal).

There was in this case a complication of three diseases to be considered: First, a recent gonorrhœal infection; second, a chronic parametritis; third, an occluded uterus filled with a fluid. The gonorrhœa and parametritis required three months for their cure. The occluded uterus was opened by the introductiou of a small-sized trocar through the occluding membrane, which was half an inch thick. A dark colored fluid, of a smell like thickened ox-gall, dribbled from the new *os externum*. This opening was not enlarged, but kept open two weeks by the introduction of a small bougie once or twice a day; infection of the vagina was prevented by washing out the same three times a day with a solution of chloride of zinc. In six weeks' time the uterus had contracted to very nearly its normal condition. The sound now entered both cavities of the uterus, a thick layer of fibrous tissue dividing them, and each side having the same function as the other, *i. e.* separating the menstrual flow alternately.

Removal of Uterine Appendages for the Arrest of Uterine Hæmorrhage.—Lawson Tait, F. R. C. S. (*American Journal of the Medical Sciences,*) reports thirty-one cases of removal of the Uterine Appendages, for the cure or relief of uterine hæmorrhage, in four of these the operation proved fatal. He does not believe that removal of the ovaries alone, is sufficient in the majority of cases, to arrest menstruation whilst removal of the tubes as well as the ovaries seems to give better results. After a careful study of these cases, he has drawn the following conclusions:

I. That as far as its primary results are concerned, removal of the uterine appendages for the arrest of intractable uterine næmorrhage, is an operation which is quite as easily justified as any of the major operations of surgery.

II. That so far as its secondary results are yet known, it is an operation which yields abundant encouragement for its further trial.

As conclusions which are indicated, but not wholly proved, I think I may formulate a statement that removal of the overies alone is not sufficient to arrest menstruation, but that removal of both tubes and ovaries, does at once arrest it. So far as some of these cases have gone, the arrest would seem to be permanent. This conclusion is quiet in harmony with what is known of removal of both ovaries for large cystomata, for in such cases the tubes are almost uniformily included in the clamp or ligature, and menstruation is arrested.

Three at least of the cases, and probably two others, show that the arrest of menstruation by this means leads, or may lead, to the atrophy of the tumors.

Finally, there is some close connection, here pointed out I believe for the first time and worthy of very clear study, between uterine myoma and its accompanying hæmorrhages, and cystic diseases of the ovaries. In two of the cases the cystic disease seemed to be the cause of the hæmorrhage, without any myoma intervening.

Another conclusion is, I think, to be justified, that the whole subject is worthy of careful study, and should not be made the subject of premature and hostile conclusions.

The Successful Removal of a Subperitoneal Fibroid of the Uterus, with Remarks.—Dr. R. B. Hanahan, (*The Med. Record*, Dec. 24, 1881,) after very frankly ackowledging his errors in diagnosis, reports the following interesting case with remarks:

"On the 25th of February, 1881, I was called to see Hannah J——, a colored woman, living about five miles from Winnsboro, S. C., I found her abdomen enormously distended, some slight anasarca of the lower extremities, bowels constipated, tongue heavily coated, conjunctivæ discolored, urine scanty and high-colored, and her skin harsh and dry, I was disposed to believe it a case of ascites from derangement of the liver, but came to no positive diagnosis. Upon my second visit I accidentally happened to meet with the former owner of the woman, and she inquired if Hannah had informed me of a tumor growing in her side. That gave me a new departure, and on my next visit I ascertained that the tumor was still there, and had grown considerably since her illness. Upon examination externally, I could indistinctly trace the outlines of the tumor, located, as I thought, in the right iliac region, but could find no evidence of its presence upon indagation. I introduced the sound, but still could trace no connection between the uterus and tumor, as shown by motion, etc. I arrived at the conclusion that here was a case of ovarian tumor, and possibly my conclusion was hastened by a desire for an operation of that kind. However, I obtained the advice and assistance of an older

practitioner than myself. and we agreed to tap the tumor, when we could form a more accurate opinion. This we did, and drew off about three and one-half gallons of water. We could then distinctly trace the outlines of the tumor, and our former diagnosis was confirmed.

We introduced the sound again, and still could detect no motion in the tumor, nor anything to cause us to doubt the correctness of our previous conclusions. I determined to operate, and selected a day not far distant, for the woman was going down and had reached the point stated by Dr. Emmet to be the one for proceeding, viz., a shrinking of the fat about the muscles of the neck and disturbance of the digestive system. I examined the urine, and could find no kidney degeneration; so I directed a warm foot-bath every night, the skin to be rubbed with vaseline, a generous diet. and her bowels to be attended to. I had hoped that the anasarca would have subsided after the pressure was taken off the renal vessels by the tapping, but at the time appointed I could perceive no difference.

The woman being exceedingly anxious for the operation and the surrounding circumstances about as favorable as I was ever likely to have in a darkey, I determined to perform it. On Sunday, the 29th of May, assisted by Drs. Robertson, Aiken, Madden, Scruggs and Mc Master, I chloroformed the woman and proceeded with the operation. Upon cutting through the abdominal parietes, I found instead of a healthy and shining peritoneum, a dark and congested membrane, so different from what I expected to meet as to create a doubt whether I had reached the peritoneum. Picking it up, however, and making a slight incision, the water gushed forth and I then thought it was the cyst I had divided. Upon the stoppage of the flow of water, and dividing upon a director the membrane, to my consternation and surprise, a fibroid tumor presented itself at the opening, and the next question was, abandon the operation or remove it? Passing a sound around the tumor and finding no adhesions, and that it was pedunculated, I cut through the pedicle, taking the precaution of keeping the edge of the knife near to the tumor, in fact, I may say making the incision through its base. There were two arteries supplying the fibroid, neither of which did we secure, they retracting so quickly. The hæmorrhage was frightful, and not anticipating any such contingency, I was not provided with a cauterizing iron. We could see no termination except death. I found, however, by keeping a sponge firmly pressed upon the site of the arteries, that the hæmorrhage was controlled. I then proceeded to close the abdominal wound, adopting the method recommended by Dr. Emmet, of passing the needle at least an inch from the edge in the peritoneum, and bringing it out nearer to the edge in the skin. After passing the sutures (I

used silver wire), I removed the sponge and found there was still some hæmorrhage, so it was decided to use a preparation of iron, which was freely done. A sponge was saturated with the solution of persulphate of iron and passed around in the wound, and as death was what we expected, we were not over-particular as to what and where it touched. The abdominal wound was then closed, leaving an opening at its lowest point for drainage.

At my visit in the morning, about 10 o'clock, I fully expected to find some discharge issuing from the wound, and had provided myself with syringe and means to wash out the cavity. To my surprise, on attempting to pass a gum catheter through the opening I had left, I found union had taken place, and the wound closed through its whole extent. The pulse was 120, thermometer 100°. She had reacted entirely and promptly from the chloroform, her skin and kidneys were acting profusely, which they had not done for months. She was cheerful and in good spirits, and seemed to be doing well. The pulse fluctuated between 88 and 100 for a week, and the thermometer ranged about 100°, but she never suffered in any way and the quickness of pulse seemed rather the result of debility, than from any fever that might be present. Her skin and kidneys continued to act freely, and on the eighth day, when the sutures were removed, there was no sign of anasarca. The wound was entirely healed, except a small spot about an inch below the umbilicus, which has since healed up. The woman's appetite had returned, and there were no untoward symptoms. In two weeks she was sitting up, and in less than three weeks she was walking around the house. I carried out as fully as possible the Listerian method. I had devised an atomizer, but from accident it would not work; in every other respect it was fully carried out. Upon the removal of the tumor, we discovered two others. One, a small one, on the left anterior surface, and a larger one on the posterior surface of the uterus. The weight of the tumor removed was 29 ozs., 7 drs. I desire to call particular attention to the fact that there were no ligatures used, no opiates at any time, and no stimulants except a little just prior to the administration of the chloroform.

If the confession of my errors enables any professional brother to avoid similar ones, or if by the publication of this case I have contributed anything to the literature of the subject, then my purpose has been fulfilled.

Rythmical Uterine Contractions as Diagnostic of Pregnancy.—Dr. J. B. Hicks in a letter to the *Lancet*, September 24, 1881, on "Uterine Contraction," renews his contention for rythmical uterine contraction as diagnostic of pregnancy, but concedes the importance of certain observa-

tions by Dr. John Williams and Dr. E. Herman of somewhat similar contractions in soft fibroids. Even in such cases the uterine nature of the tumor must be conceded, he remarks, and amenorrhœa would establish the diagnosis of pregnancy. Such tumors as are referred to are not usually symmetrical, and hence would hardly counterfeit normal pregnancy, and the relaxation is not so complete between the contractions as in pregnancy, in which latter case palpitation of the fœtus settles the question. In male pregnancies, however, with hæmorrhages, the symptoms would be very similar to those of the tumors mentioned, and further evidence should be accumulated to place the differentiation on a clear basis —*N. Y. Med. Jour. and Obstet. Review.*

Retention of Urine Early in Pregnancy.—M. Broussin (*Archives General de Medecine*, September, 1881.) relates three cases of retention of urine early in pregnancy, [Only one of the cases was observed by himself. In that case a satisfactory examination early in its course was prevented by the great tenderness of the parts. It is by no means certain, therefore, that the retention was not due to retroversion of a gravid uterus, as it confessedly was in the two other cases. The author doubts it, however, and proceeds to construct a theory of its nervous or congestive origin.]

The woman was fatigued, having been up several nights with a sick child; wherefore, he suggests, the pelvic organs, especially the neck of the bladder, already predisposed to congestion by the existence of pregnancy, rapidly became congested, causing a retention analagous to that which is observed in the subjects of prostatic diseases as the sequence of fatigue or excess.—*N. Y. Med. Jour. and Obstet. Review.*

The Treatment of Abortion.—In an article under the above heading in the *Virginia Medical Monthly*, September, 1881, Dr. G. F. Harrison counsels a middle course between the practice of operative interference as almost invariable—a course which he thinks professed gynæcologists are rather prone to adopt—and the equally hazardous routine that general practitioners are apt to fall back upon, that of temporizing in the presence of manifest danger. Supposing the os uteri to have closed, and the symptoms to indicate that the expulsion of the ovum has not yet been thoroughly accomplished, he advises anæsthetising the patient, when it will generally be found easy to introduce the finger into the uterine cavity, and, with the aid of downward pressure upon the uterus with the external hand, the necessary manipulation for the removal of whatever may be shut up in the cavity of the organ will be a matter of little difficulty. He would reserve the use of the curette for exceptional cases, chiefly those in which there are adhesions.—*N. Y. Med. Jour. and Obstet. Review.*

Laparotomy for Extra-uterine Pregnancy.—Dr. C. Litzmann (*Archiv. fur Gynak.*, XVIII, 1, 1881) records a successful case of laparotomy, for extra uterine-pregnancy. The gestation was of the tubal variety, and proceeded to term.

The operation was undertaken nine months after the death of the fœtus, and was done with antiseptic pre-cautions.

The placenta appeared macerated, and the soft parts of the fœtus gave way easily under the traction. The entire sac was removed, being only slightly adherent except by a pedicle-like attachment to the right broad ligament. This was tied in divisions with a catgut ligature, and its cut surface cauterized with carbolic acid.

The incision was dressed after the manner of Lister. The convalescence was interrupted by a mural abscess, which the author imputes to the silk sutures used in closing the incision.

The case should teach us, he thinks, that it is not so extremely rare for a tubal pregnancy to advance to full term, and that we should take this possibility more into account in practice.—*N. Y. Med. Jour. and Obstet. Review.*

Nitrous Oxide as an Anæsthetic in Midwifery.—Dr. S. Klikowitsch (*Arch. fur Gynak.*, XVIII, 1, 1881) treats of the above subject somewhat exhaustively, and thus enumerates its advantages: 1. Perfect freedom from danger to life for both mother and child, and no disturbance of the process of parturition. 2. Undoubted anodyne action in all stages of labor. 3. Unclouded consciousness during the highest degree of anæsthesia, obtained by mixing oxygen with the nitrous oxide, and the consequent possibility of enlisting the so-called forces of parturition. 4. Absence of vomiting, and in many cases the control of vomiting that has already set in; the non-occurrence of a stage of excitement and of the usual unpleasant sequelæ of anæsthesia. 5. The absence of any cumulative action. 6. The fact that the administration need not be carried on by the physician in person. The chief disadvantages are the costliness of the gas and its non-portability, comparatively speaking.—*N. Y. Med. Jour. and Obstet. Review.*

Bromide of Potassium in Inflamed Breasts.—Dr. J. Grammar (*Virginia Medical Monthly*, September. 1881) reports good results from the use of bromide of potassium in inflammation of the breast, given internally in doses of two grains every three hours during the day.—*N. Y. Med. Jour. and Obstet. Review.*

Restoration of the Cervix Uteri and Perinæum, by Operating upon Both at the Same Time.—Dr. A. J. C. Skene, *Am. Med. Digest*, says: The co-existence of laceration of the cervix uteri and perinæum frequently

comes to the notice of the gynæcologist, and hence the management of such cases becomes an important question of every day practice. When all the circumstances are favorable it is most convenient for the surgeon to first restore the cervix uteri, and subsequently to operate upon the perinæum. It is perhaps better for the patient also to follow this plan, because it is more likely to give final success. This point is not definitely settled, however. Granting, for the present, that it is best for all parties concerned to restore the cervix before beginning the treatment of the perinæum, still there are circumstances which compel the gynæcologist to do both operations at the same time. Hospital patients, who are poor and having homes and children to care for, can ill afford the time for prolonged treatment. The same may be said of private patients in moderate circumstances. Such conditions as these are strong reasons in favor of doing both operations at once. Again, this plan requires the patient to be anæsthetized but once, which is a great advantage. A saving of about one-half the usual time to the patient and operator is the chief advantage which may be claimed for doing the two operations at once. The objections, on the other hand, are the difficulties in the way of managing secondary hæmorrhage, should it occur; the impossibility of watching the cervix during the healing process, and employing any after treatment which might be necessary, and finally the injurious results arising from leaving the sutures so long in place, it being impossible to remove them until the perinæum has completely healed. Now, regarding the first two objections, they should have little weight in this matter. Secondary hæmorrhage is so rare after restoration of the cervix, if proper care is taken in the operation, that it may be dismissed. Regarding the after treatment of the cervix, very little is required as a rule. In the majority of operations, vaginal injections only are used, and they are generally useless. It will be observed, then, that the chief difficulty is with the sutures, and that is, or has been, a valid objection. The silver wire suture, if left in the cervix for three weeks (the time required before their removal is safe, when the perinæum has also been operated upon), causes inflammation and ulceration of the cervix or vagina, or both. This may not occur to any troublesome extent if the twisted ends of the sutures are cut short and laid down close upon the surface of the tissues. But in this case they are liable to become imbedded so that their removal is difficult. In nearly all cases the silver wire gives trouble, if left so long in place. To obviate this—the most important objection to doing both operations at one time—a suture is required which can be left in the cervix with impunity for three weeks or a month. For years I have used silk sutures in *restoring* the cervix uteri, and have found that they can be left in the tissues a long time without causing much irritation, and therefore they answer the purpose fairly well.

I have operated quite a number of times in this way, leaving the sutures in the cervix until the perinæum had sufficiently healed to permit their removal with safety. The presence of the sutures in the cervix gives no trouble, but their loose ends, lying in the vagina, has caused a slight vaginal leucorrhœa in some of my cases. This has really done no harm, but I have found that it might effect the healing of the perinæum.

In order to avoid any possible harm from the silk sutures I have used the Japanese sutures, made of whale sinew. This material answers the purpose perfectly. It is absorbed in a week at least, so that by the time the perinæum is healed firmly enough to permit an examination of the uterus with the speculum, the sutures used in restoring the cervix have all disappeared.

My experience with this kind of suture has been as follows: I first used two of the six sutures in restoring the cervix, one on each side. The other sutures used were new silk. At the end of a week, when I came to remove the sutures, I found the ends of the Japanese sutures in the vagina, the portion included in the tissue, had all disappeared.

In my next case (in which the cervix and perinæum were both operated upon at the same sitting), I had only two silk sutures, and all the rest Japanese. The sutures were removed from the perinæum at the end of a week, and at the end of three weeks the cervix was examined and the two silk sutures were found in place, but there was not a trace of the Japanese sutures to be found. The restoration of the cervix was as perfect as I have ever seen, either in my own practice or that of others.

In my next case, in which the two operations were performed together, Japanese sutures were used exclusively in the cervix. At the end of the third week the cervix was healed completely, and the sutures had all disappeared. At first I was afraid that these sutures might be absorbed before the parts healed, but I know that in restoring the cervix, union takes place in a few days, if it is obtained at all; hence I presumed the Japanese sutures would hold as long as was necessary. Subsequent observation confirmed that belief, and now I restore the cervix and perinæum, and give no attention to the cervix until a month after the operation, when an examination is made to see what the result is. So far I have every reason to be satisfied with the Japanese suture for the purpose herein described. In restoring the cervix alone, in which case the sutures can be removed at the end of a week, I do not know that the Japanese has any advantage over silver wire or silk, although I presume it is as good as either of the others.

The Local Treatment of Chronic Metritis.—Most cases of chronic metritis require local treatment for their cure. If the disease be limited

to the mucous membrane of the cervical canal, the treatment is comparatively simple, and cure can be effected by various harmless means. Greater difficulty is met with when chronic inflammation of the body, or of the body and neck of the uterus calls for local treatment. This is new only in the manner of its execution, and consists in the systematic cauterization of the cavity of the body, and eventually of the cervix of the uterus, by means of an instrument like a sound, into a hollow in the upper end of which is fused *lapis mitigatus* (argenti nitras, weakened by the addition of nitrate of potash). This can be employed, as is self-evident, according to the behavior of the endometrium, and the resisting power in the uterus in individual cases, at one time more frequently and thoroughly, at another more rarely and cautiously, and will have, according to the peculiarities of the special case, by itself alone, or in conjunction with other means (topical blood-letting, scraping off the growths of the endometrium), almost sure results. Only in a few cases of large tumors or severe bleeding granulations of the endometrium is the employment of the galvano-cautery or thermo-cautery necessary. The intra-uterine application of lapis mitigatus is with the necessary caution, absolutely free from danger, and in a small number of cases only does it cause pain, which, however, usually is of short duration; sometimes, also, it gives rise to considerable but transient bleeding. Once only have we noticed, after a severe cauterization of the whole of the uterine cavity, dangerous metritis or peri-metritis, which, however, ended in a few weeks in complete recovery.—*Am. Med. Digest.*

An Improved Method of Treating Uterine Displacements.—Dr. Robert Bell of Glasgow, gives the result of his experience in the treatment of uterine displacements by vaginal tampons of cotton-wool soaked in a solution of alum and carbolic acid in glycerine.

Dr. Bell's solution is the following: Glycerine, 80 oz.; alum, 10 oz.; carbolic acid, 1¼ oz. This solution, it will be observed, theoretically—and Dr. Bell claims to have found, practically—fulfils most desirable indications. The glycerine depletes, and so lessens congestion by its affinity for water; the alum constringes, and so braces up the vaginal walls; and the carbolic acid, by its antiseptic properties, renders it possible for the cotton to be retained for a convenient length of time. He usually employs only one large tampon, but in some cases of flexion, uses two—a small one pushed well up in front or behind the uterus, and a larger one beneath it. In the case of prolapsus, if there be laceration of the perineum, this must first be rectified. The uterus is elevated as nearly as possible to its normal position, and there retained by a suitable sized tampon of cotton soaked in the solution. This can be retained for

three or four days without becoming offensive, on account of the antiseptic ingredients. He claims to have seen patients thus completely cured of procedentia, which had existed from three to eight years by perseverance in the treatment for from two to seven months.—*Can. Med. and Surg. Journal.—Am. Med. Digest.*

Pregnancy and Adhesions after Ovariotomy—Dr. Walter F. Atlee (*Am. Jour. Med. Sciences*) relates an interesting and singular case, where mother and child died during labor from difficulties attributed to shortness of the pedicle, secured by a clamp, in ovariotomy. A cystic colloid of the left ovary, nine pounds in weight, had been removed in 1875. The very short pedicle was secured by clamp—recovery was rapid. One small place about the centre of the scar never healed, and through this (the pedicle) the patient menstruated. Having become pregnant, in February, 1880, she was taken in labor. Though in labor five days, the os had dilated to the size of a quarter of a dollar only. Digital dilatation was resorted to and the forceps applied—occiput to the left sacro-iliac synchondrosis, and body back forward, as it should be in first position of the vertex. It was impossible to make the head advance. After fruitless effort the child was found to be dead, and the mother, having lost forty ounces of blood and taken twelve ounces of ether, died shortly after, undelivered. The difficulties were attributed to irregularity of contraction in a deformed womb, in consequence of the left horn being fastened by a very short pedicle to the abdominal wall just above the pubes.—*Am. Med. Digest.*

Nitrate of Lead in Ulcerated Cancer of the Uterus.—M. Cheron, in the *Revue des Maladies des Femmes*, remarks that he was led to employ nitrate of lead in the treatment of ulcerated epithelioma of the cervix uteri by the good reports from Italy regarding the benefits obtained from this drug in ulcerated cancer of the organ.—*Am. Med. Digest.*

Pregnancy Complicated with Epithelioma of Cervix. — Dr. Edis brought before the notice of the Obstetrical Society, at its meeting on Wednesday last, an interesting case of pregnancy at the sixth month complicated with extensive epithelioma of the cervix uteri. The Porro-Freund operation was contemplated, but found inadmissible, as the vaginal wall was implicated. The question now was what was best to to be done, to induce premature labor, or to allow the patient to go on to full time and perform Cæsarean section? The latter seemed to be the view entertained by the majority of the speakers.—*Med. Gazette.*

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, September 1st, 1881.

The President, Dr Edward L. Duer, in the chair. The Secretary read the following letter from Dr. R. Stansbury Sutton, of Pittsburgh, Pa:

PESSARY REMAINING IN THE VAGINA FIFTEEN YEARS.

I send you a glass ball which I removed from the vagina of a woman about seven years ago, having divided the perineum with a knife to get it. It had been introduced by a practitioner still living in this city, fifteen years before. It was incrusted, and even under an anæsthetic, the space of the sphincter vaginæ would not permit it to come through.

I was called in consultation to see the woman, supposed to be in great danger from dysentery. I diagnosticated a foreign body in the rectum, but on examination found it to be in the vagina. She had forgotten all about the ball being in her. She soon got well.

Dr. Wm. Goodell had removed from a patient a disk-pessary, which had been allowed to remain thirty years. He had, on one occasion, very great difficulty in removing a glass-ball pessary, but did not have to divide the perineum. It was finally extruded with a force which sent it half across the room. On two occasions he had removed rings which had become imbedded in the mucous membrane; one he cut out—the operation caused a free hemorrhage; the other ring was divided and withdrawn.

Dr. E. L. Duer mentioned a case which had occurred in the practice of Dr. R. Levis. A woman had introduced a glass pessary, and in the attempt to withdraw it, it was broken. Dr. Levis injected plaster of Paris and water, and then oil, and delivered the mass by means of the obstetric forceps.

Dr. E. E. Montgomery had been present at the removal from the vagina of a young woman of a hairpin, which had been introduced several years before. It had become incrusted with calcareous matter an inch in diameter from which both ends of the pin protruded.

Dr. B. F. Baer had removed a glass ball, similar in size to the one presented to the Society this evening, from the vagina of a single woman, æt. 44. This pessary had been introduced eighteen years previously, and worn continuously during that time. For a few years before coming under his observation, she had had a fetid, watery, semi-purulent discharge from

the vagina. This had been increasing in quantity, and, finally, had become tinged with blood. Touch revealed the vaginal orifice to be very small, rigid, and unyielding, and within, the glass globe above referred to. It was removed with some difficulty after grasping it with a fenestrated polypus forceps, and without cutting or lacerating the tissues at the vaginal orifice. The fundus of the vagina was dilated and thinned, and its mucous surface abraded and granular. He once painted this surface with equal parts of carbolic acid and glycerine, followed, on the next day, by astringent injections. The granulating surface has healed, but the vaginal fundus remains as toneless as a rag.

A widow, seventy years of age, stated she had been wearing a "glass womb-supporter" for twenty years. She had been in the habit of removing it ocasionally, for the purpose of cleansing it, but in the last two years she had been unable to get it away. She had profuse fetid leucorrhea. He removed with the greatest difficulty a large glass disc, measuring three and a half inches in diameter and nearly one inch thick at its border. The vagina was very thin, relaxed, and granular. She was ordered treatment similar to that used in the former case. A few days afterwards, the uterus and and vagina were found to be completely prolapsed and almost entirely denuded of epithelium. After preparing the parts by the free use of tannic acid, applied by inserting a sponge charged with a strong solution, a Hodge pessary was adjusted, which retained the parts in situ. The uterus was in a condition of senile atrophy, and, therefore, the weight to be sustained was very slight.

On another ocasion, he removed from the vagina of a woman, forty-two years of age, a large air-ball of the form used by boys for playing. This had been worn for two years continuously. The patient complained of a thin, dirty, and very offensive discharge, and as she presented a cachetic appearance, malignant disease was suggested. The vagina was occupied by the ball, which was full of the secretions in a state of decomposition. In removing the ball, it was, of course, necessary to make pressure, which forced out through the perforation in it a portion of the contents, which were of the most horribly fetid character.

Whilst relating these cases of use and abuse of a very bad instrument, it may not be out of place to report a case illustrating the abuse of a very good one.

A married woman, thirty-eight years of age, and residing in a neighboring city, stated that six months before coming under observation, there had been placed a "womb supporter," and as it relieved the dragging pain of which she complained, it was not thought necessary to remove it, although she had suffered for some time from a purulent, bloody leucorrhea. Touch showed the vagina to be greatly stretched by an enormous

Hodge pessary, which was fixed firmly against the symphisis pubis by its anterior portion; whilst its posterior bar carried the vaginal fornix far back towards the hollow of the sacrum. Granulations were thrown up all around it, and it seemed to be immovably fixed. The question, how to remove it, was a vexed one. To carry an instrument strong enough to cut the pessary, would endanger the thin, ulcerated tissue beneath it, and might result in opening the bladder or Douglas's pouch, and to extract it entire seemed to offer considerable difficulty. But the latter method was decided upon, and by care, patience, and traction, it was finally delivered. It measured four inches in length and three in breadth. Considerable hemorrhage resulted from stirring up the granulations. Passing the finger now into the vagina, it was found to be deeply ulcerated at all points previously pressed upon by the pessary; on either side the index could be laid in the sulcus, resulting from the ulceration and the granulation tissue thrown up around the instrument. The vaginal wall opposite to Douglas's pouch was so nearly ulcerated through that it seemed as if the slightest pressure by the finger might produce rupture.

These errors in the use of the pessary were committed because of the mistaken idea which exists, that the instrument, to fulfil the purpose for which it is used, must act as a wedge or prop instead of as a lever. Any pessary which dilates, changes the shape of, or stretches the vagina more than just enough to restore it to its natural position, or takes a point of support at any one place in the vagina more than at another, should be discarded as a bad instrument.

LACERATION OF THE CERVIX UTERI.

Dr. John C. Da Costa presented an analysis of sixty-seven cases of laceration of the cervix uteri, which were, with one exception, not operted upon. These cases were all examined during June, July, and August, 1881.

The points upon which observations were made were: 1st, as to the *position* of the laceration; 2nd, as to its *direction;* 3rd, as to its *gravity;* 4th, *complications;* 5th, *symptoms;* 6th, *causes.*

1st. *Position.* All, with one exception, had one or more lateral tears; one was anterior only.

2d. Two, or three per-cent, had a single tear directly to the right.

Twenty-nine, or forty-three per-cent, had a single tear directly to the left.

Twenty-nine, or forty-three per cent, had trasverse tears.

Three, or four and one-half per cent, had double tears nearly directly to the left. One was trilateral; one was antero-posterior through both lips; one had four tears; one had five teais. Of the total of sixty-seven

cases, sixty-four, or ninety-six per cent, had one or more tears through the left side.

3d. *Gravity* of the lacerations. Thirty-seven, or fifty-five per cent, were deep or very deep. Twenty-one, or thirty-two per-cent, were of medium depth, and nine, or thirteen per cent, were superficial.

4th. *Complications.* A lacerated perineum was present in thirty-nine cases; of these, twenty-four were deep, and fifteen were slight.

5th. *Symptoms.* There were the general train of symptoms of uterine disease. A wearying, dragging pain between the crest of the ilium and the internal abominal ring was present in the left side in all but two cases; in one, it was on the right side, and in one it was absent. The greater number of the patients had been under treatment for abrasions of the os, or "ulcers on the womb."

6th. *Causes.* It was very hard to get any clear or distinct history in the majority of cases. In those who had had but one child, there was generally a history of unskillfully-used forceps or the early employment of "forcing powders."

The secretary read the following extract from a letter from Dr. R. S. Sutton:

It is a little more than five years since I first appreciated the importance of lacerated cervix. Like many of my brethren, yet unconverted, I was treating the cervix for "ulceration, inflammation," et cetera. I was treating no small number of women, but a great many, and doing some good and much mischief. Without regard to labor or expense, I changed my programme, and not only informed myself, but opened my house for the reception of patients, and brought from New York nurses who had been employed by Drs. Emmet and Thomas.

I believe I have passed over in the last five years, nearly the whole field of gynecological surgery with but two failures, both plastic operations, one cervix and one anterior wall operation. Of these operations, twenty-five were for the cure of laceration of the cervix, and in twenty-four of these union was complete; in one no union occurred. All of these cases were patiently treated with hot water, iodine, blisters, rest, etc., where it was required for the relief of latent cellulitis. Prior to operation, a purgative was given; in many (say ten) no anesthetic was administered. In none did acute cellulitis follow the operation. All were confined to bed in a recumbent position for two weeks, and exercise was forbidden the week following. In several, the laceration was unilateral—sometimes on one side, sometimes on the other—the majority being on the left side. In one, the laceration was bilateral, but antero-posterior. These cases were not selected; they were often of many years' standing, and full of cicatricial tissue, due to the faithfulness of our brethren to these cases. One

woman had convulsions; the operation cured her and ended eight years of torture. The greater number of these cases were accompanied with sub-involution; the latter was very speedily cured by the operation. In some cases the laceration was not deep, and I tried closure of it to see the result on the general health. I have arrived at the conclusion that, however slight the laceration is, it may be the cause of reflex nervous disturbance, and demands treatment as surely as does a slight anal fissure. After operating where three stitches, one on one side and two on the other, were all that were needed, the health has been restored, and the woman made profoundly thankful. In bad cases, the good results follow the operation more slowly, and it may require two years after the operation to get its full effect. Pregnancy soon followed in some cases, but in others the sterility still persists.

I believe we are on the right track in regard to the treatment of the cervix uteri, and will ere long see no more ulceration; and inflammation will not be admitted to be the pathological factor in the congestions so frequent at the cervix uteri in those who have borne children.

Dr. Wm. Goodell remarked that the laceration, although superficial, would need operation if it developed ectropion. He had noticed that every case of cancer of the uterus which had come under his notice, had been in women who had borne children, and he had been led to think that laceration of the cervix was the essential developing agent. The complication of lacerated perineum has great effect upon the symptoms and consequences of cervical laceration. With regard to causation, it was not always possible to prevent laceration. He spoke of one case in which furious convulsions existed, and in which prompt delivery was advisable. He applied the forceps high up, and, notwithstanding great care, laceration occurred. Laceration of the cervix uteri is a cause of subinvolution of the uterus, and also seems to be a cause of hypertrophic elongation. In one instance, a laceration caused the cervix uteri, during pregnancy to project a great distance outside of the vulva. During labor, the cervix became purple from congestion, and so swollen that he feared further tearing. Finally, although the head was outside of the body, it was still within the cervix, and, as there did not seem to be sufficient *vis a tergo*, the child being principally outside of the body, he had to apply the forceps. He had seen other cases of the same kind, but to a slighter degree. He wished particularly to call attention to one remark in Dr. Sutton's letter, that, apart from lacerations, ulcerations of the cervix do not exist. Dr. Goodell deemed this too sweeping a statement, for he had seen extraordinary erosions or ulcerations in unmarried women of undoubted chastity, where lacarations were simulated, the hymen being perfect.

While present recently at the International Medical Congress at London, he had with much surprise heard Dr. Bennet, the pioneer of gynecology in England, read a paper denouncing Emmet's operation for laceration of the cervix, and asserting that all such cases could be cured by local applications. In the discussion which followed, Dr. Playfair stated that until recently he had held the same opinion, but a patient who had long been under his care, with "ulcerated os," and whom he could not cure, had been operated upon in New York, and restored to health. Finding her so well, he examined her cervix, and found it virginal, with the ulcer and tear gone. The successful results in this case converted him, and he had since operated successfully on a number of cases.

Dr. R. P. Harris had seen a case in which two converging tears had separated a deltoid-shaped piece of uterine tissue, which had a polypoid appearance, was hypertrophied, and a source of great irritation; as it was extremely sensitive, it was removed by means of the *serre-nœud.*

Dr. Ellwood Wilson described a case in which there was a similar polypoid development following laceration. The patient had had four children with natural labors. The fifth labor was irregular; it was a breech presentation, and caused laceration of the cervix, followed by a free hemorrhage.

After lactation had terminated, menstruation was re-established, but the periods were prolonged and the flow excessive; an examination revealed the laceration, it was operated upon, and the menorrhagia ceased.

In another case, a rapid birth during the absence of the physician caused a laceration of both cervix and perineum. Menstruation was profuse for two years. It was cured by operation, and another labor was safely passed through four years later.

Dr. E. L. Duer spoke of the effect of laceration which had not been operated on, upon the duration of pregnancy. In one case which had been under his care recently, the patient went two weeks over her time.

Dr. E. Wilson had noticed similar cases, but did not think them consequent on the laceration.

Dr. Montgomery was now awaiting the termination of a pregnancy which had reached its two hundred and eightieth day three days ago. The os is patulous, but there is no sign of labor.

Dr. J. C. Da Costa had seen four cases of uterine cancer fully developed, and one which was in an early stage. They had all followed laceration of the posterior lip.—(*January Supplement to American Journal of Obstetrics.*

NOTES AND ITEMS.

The *Journal of Nervous and Mental Disease* heretofore so ably edited by Dr. J. S. Jewell, of Chicago, will hereafter be edited by Dr. William J. Morton, of New York, and published by G. P. Putnam's Sons.

Wm. Wood & Co. issue a monthly supplement in connection with the *American Journal of Obstetrics*, Dr. Paul Munde, Editor.

Henry C. Lea's Son & Co., have changed the *Medical News and Abstract* from a monthly to a weekly with the title *Medical News*. A journal of thirty-odd pages.

The American Medical Bi-Weekly, Dr. E. S. Gaillard, Editor, has become with the opening of this year a weekly, and now known as the *American Medical Weekly*. The subscription price will be $2.00 instead of $1.00 annually.

Dr. Joseph F. Edwards severed his connection as Editor of *The American Specialist*. He makes his farewell bow in the number of January 1st.

The Detroit Clinic with Dr. H. A. Walker as Managing Editor, is "a weekly exponent of clinical medicine and surgery." Subscription price, one dollar. Published by George S. Davis, Detroit. It will be issued every Wednesday. The first number appeared January 4, 1882.

The initial number of the *American Medical Digest* bears the date of January, 1882. Edited by Dr. John C. Lester, with Drs. A. J. C. Skene, Arthur Matthewson, F. R. Sturgis, George Henry Fox and J. C. Shaw, as contributors. It is a very neat, double-column, 48 page monthly, made up as the title indicates, of extracts from current medical literature. The subject matter is in three departments: Medicine, Surgery, Diseases of Women and Children and Obstetrics. The subscription price is $3.00. H. Campbell & Co., Publishers, New York.

PROFESSOR PIRIGOFF.—The death of Dr. Nikolau Pirigoff is announced by telegram from St Petersburg. He was Professor of Surgery to the Medico-Chirurgical Academy in St. Petersburg, and a member of the consulting staff of several hospitals in that city. In 1840, he brought out a valuable treatise in the division of the tendo Achilles in orthopædic surgery. He also wrote on cholera, on the surgery of the arterial trunks and of fasciæ, and on the medical aspects of the Caucasus, and on topographical anatomy. His work on this last subject forms a fine atlas of anatomy as illustrated by frozen sections. It is, however, with military surgery that his name will ever be most closely associated. He is the medical historian of the Crimean and Circassian campaigns; and also wrote a report on the permanent and improvised military hospitals in Germany and Alsace-Lorraine during the war of 1870.

The late Professor is probably best known to Englishmen in association with one of the numerous methods of partial amputation of the foot. Last June we announced the celebration of the fiftieth anniversary of his commencement of official life.—*Brit. Med. Jour.—Med. Gazette.*

Please read *Cheselden* for Chelsenden on page 242.

By an oversight the article by Dr. Amidon commencing on page 286, was not credited to the *Am. Jour. of Nervous and Mental Disease*, December, 1881.

THE

ROCKY MOUNTAIN

MEDICAL TIMES.

A MONTHLY JOURNAL OF

MEDICAL, SURGICAL AND OBSTETRICAL SCIENCE.

MARCH, 1882.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

By W. R. Whitehead, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER.

LECTURE V. HYPERTROPHY OF THE PROSTATE.

Gentlemen:

The disease that will engage our attention this morning, is one that is never seen except in old men, or men past the age of fifty-five years. Hypertrophy of the prostate is the disease to which I invite your studious attention; although the pathological condition, which characterizes this malady, cannot by any known means be removed or cured; yet the proper palliative measures adopted for its relief, are usually satisfactory, and in some cases are such as to make the patient quite comfortable, and to prolong life to an extreme old age. This is the most common disease that affects the prostate gland; and while this malady is only observed in old men, yet it is not a result of old age, but merely incident to it. According to Thompson, about one old man in ten will probably demand treatment for this infirmity. Only one in seven has marked hypertrophy of the prostate; and the prostates of two-thirds of all old men, entirely escape this disease; so that one third only have slight hypertrophy. It was supposed by Sir Everard Home, and still later by Sir Chas. Bell, that hypertrophy was a consequence of old age; and as Home had in his specimens of

prostates of old men, nearly always seen an hypertrophied condition of the central portion of the prostate, he thought this condition a normal one, and ascribed to this organ a middle lobe, besides its two lateral lobes. So recollect that there is no such thing as a middle lobe of the prostate in its healthy state. This gland is composed essentially of two kinds of tissue; a glandular, and a fibro-muscular tissue. It is the glandular structure that undergoes atrophy or but slight change, and the fibro-muscular that becomes hypertrophied. There is an augmentation of the normal histological elements, as in the proliferation of the fibrous tissue that forms certain uterine fibroids; indeed the analogy in this respect, was pointed out by Velpeau. Remember then, gentlemen, that hypertrophy of the prostate is not simply an enlargement or inflammatory engorgement of this organ, as in prostatitis, which disease affects the glandular structure. Neither should the enlargement of this gland, due to tuberculous deposit, or to deposits, the result of inflammatory action, he confounded with hypertrophy of the prostate. This is a disease, that by the gradual development of the fibro-muscular element of the gland, gives rise to mechanical effects, which are obstructive of the outward flow of urine, and which cause compression of the glandular tissue; obstruction of the venous circulation of the parts; and narrowing and displacement of the prostatic portion of the urethra. The most frequent seat of hypertrophy, is that portion of the gland, between the ejaculatory ducts, and which is not covered by the strong, and resisting fibrous capsule, that encases the gland elsewhere; hence there occurs a protrusion of the hypertrophied muscular fibres at this part, which corresponds to what is sometimes called the middle lobe. The size of an hypertrophied prostate is very variable; It may attain to the volume of a middle-sized orange, or even larger. Usually the central part of the galnd is the only conspicuously developed part, and a slight hypertrophy of this part may occasion more distressing symptoms, due to obstruction of the urine, than a much more considerable enlargement of one of the lateral lobes. When the hypertrophy occupies one side of the prostate, a distortion of the prostatic portion of the urethra is the result. When the hypertrophy is median, as is most frequently the case, the floor of the urethra is elevated, and this canal is elongated, even to the extent, sometimes of three inches.

The growth of the so-called middle lobe, may sometimes take the form of a pedunculated tumor, and act like a ball and socket valve, obstructing the outward flow of urine. There is no constant form in hypertrophy of the prostate. Occasionally the gland may be more or less uniformly hypertrophied, forming an equally distributed and concentric hypertrophy, and which occasions symptoms very different from those observed in the ordinary form of median hypertrophy. Sometimes at the

neck of the bladder, there are crescentic folds of hypertrophied muscular fibres of the bladder, or of mucous membrane arranged in crescentic folds, and which are obstacles of a serious nature, but which may exist quite independently of any enlargement of the prostate.

If you will call to mind the peculiar anatomical appearance of the prostate; its fibrous envelope; its plexus of veins; its relation to that portion of the urethra which traverses the upper part of this gland; and observe attentively this little diagram which I draw for you on the blackboard, you will be enabled to understand more satisfactorily, why the symptoms of this disease are entirely the result of the encroachment of the growing mass on surrounding parts. Not only does the development of the gland cause a lengthening of the urethra, but the frequent distentions of the bladder, from the increasing accumulation of urine, draw the

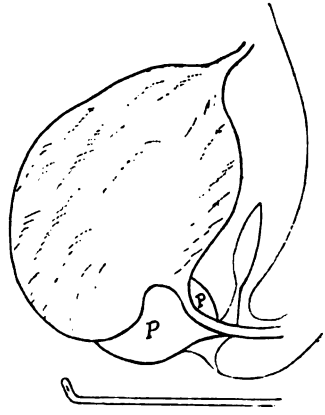


FIG. 1.

prostate, and with it the urethra upward, thus displacing this canal. If the hypertrophy is more or less general, and concentric, the organ may acquire an enormous size, and instead of retention of urine, the bladder may rarely contain any residual urine, as in the ordinary form of hypertrophy. The frequent desire to urinate, and the distressing symptoms caused by compression of the prostatic plexus of veins, inducing congestion of all the pelvic organs, and turgescence of the hæmorrhoidal veins, makes this form of hypertrophy far less endurable, than the ordinary median, or partial or lateral hypertrophy. In the usual form of hypertrophy, there is always more or less urine left after micturition, and which is called residual urine. This is the necessary consequence of the obstruction caused by this disease. The urine being long retained in the bladder, becomes ammoniacal and extremely irritating; so much so that

cystitis is a most frequent complication of this disease. Hence cystitis is often met with, and as an occasional occurence, stone forms in the bladder as the consequence of the deposit of the phosphates from the urine, giving rise to a distressing complication of hypertrophy of the prostate.

Retention of urine is pretty sure to occur, and after its recurrence several times, the bladder becomes more and more distended each time, and finally loses its power to contract, and a certain degree of atony of the organ results. This causes the urine to escape involuntarily, and induces the belief on the part of the patient, and sometimes on the part of his medical attendant, that there is incontinence of urine. and that the bladder is empty. This is readily disproved by introducing a catheter, when it will be found that the bladder is full: hence there is retention, instead of incontinence, which never occurs, except as the result of some cerebral or spinal paralysis, affecting other parts of the body at the same time. Recollect then that there is *over-distention* of the bladder by the retained urine; and the bladder relieves itself partially by an overflow of the urine, which dribbles away, and induces the belief of incontinence. The same thing occurs also in tight strictures of the urethra, and under similar circumstances. The patient gets chilled, being exposed to cold and dampness, or he commits some excess at table, and he has retention of urine. He is not relieved by the surgeon, and the bladder after being greatly distended, loses its power to contract after a certain degree of over-distention, and the excess of urine dribbles away. This disease causes violent straining in urinating, and consequently the muscular fibres of the bladder also undergo hypertrophy. The mucous membrane protrudes between the muscular fasciculi, and form those little pouches or sacculi at the base of the bladder, and to which I alluded in my lecture on cystitis.

The pathological changes that occur in advanced disease of the prostate are numerous. We may have, as a result of this malady, cystitis, stone in the bladder, and those diseases induced by congestion of the pelvic veins, such as hæmorrhoids and prolapsus of the rectum, the consequence of straining during micturition; and finally in very advanced stages of hypertrophy, disease of the ureters, and of the kidneys is not infrequent, and may make the passage of a catheter the starting point of pyæmic infection.

The progress of hypertrophy of the prostate is very gradual, so much so that the disease has often made considerable advance, before the old man thus affected, believes that there is anything wrong about his urinary organs. He notices that he is compelled to make water rather more frequently than usual, getting up in the night, or at an earlier hour in the morning than usual; and while dressing he may be required to urinate two or three times But he supposes this to be natural to his advancing

age, and feels a delicacy in alluding to these slight troubles. He gradually becomes more and more accustomed to a frequent desire to urinate, and in fact after a while has frequent and urgent calls to pass his water; but still he refrains from consulting his medical advisor, until possibly after inulging in an extra quantity of wine, or other stimulants, or after being chilled about his legs, he is taken with retention of urine, and, in a most distressed state of mind, he calls to his aid a physician. If not relieved by his medical attendant, the urine will, after some hours, dribble away from him, and he gains a temporary relief from his troubles, but not without considerable increase in the distention of the bladder. The old man then remembers, how difficult it was for him to pass his water; he had long ceased to pass a stream, but recollects that his urine dribbled from him, and often dropped on his boots; that the harder he strained, usually the less water he made, and the worse it dribbled. He can possibly recall also to mind, that in making some violent effort, as in coughing or sneezing, that sometimes a few drops of urine involuntarily escaped, so as to wet his shirt. Or possibly he has been astonished to find that during his sleep, a little urine has involuntarily escaped from him; and if he should have had enurisis while a child, and remembers it, this causes him to be extremely mortified to find that he is apparently overtaken with the same infantile infirmity again in his old age. It is difficult to say how many cases proceed so far as to have retention of urine, before a physician is consulted. But in all cases the old man with hypertrophy of the prostate, experiences some fullness, and general uneasiness about his bladder, and notices that there is occasionally a certain discomfort about the rectum; and that he wants to urinate more frequently than usual, and that he never experiences the complete relief, and comfortable feeling that he formerly experienced, after he had an urgent call to empty his bladder. If he recalls to mind his boyhood, when he could propel his stream of urine to an incredible distance, he is struck with the contrast in his old age. In fact, this reminds me of the marked difference of contractile power of the bladder at the two extremes of life. Pajot, I recollect, once alluded to this, in speaking before his class of the different expulsive power of the bladder, of an old woman who had had a number of children, and of that of a young maiden; that the old women can urinate standing, and that the young girl is compelled to squat to avoid wetting her clothes.

Now gentlemen, how are you going to recognize a case of hypertrophy of the prostate? I have told you about all of the most prominent symptoms; but it remains now to distinguish this malady from other diseases of the genito-urinary organs. If the case is one of hypertrophy, the age of the patient is the first thing to notice. The disease occurs only during

old age. The next point is that of pain; because this is a prominent symptom, and possibly in this disease, like most others, it is the only thing that will make some patients seek medical advice. But pain occurs in stone in the bladder, and hypertrophy may be complicated with vesical calculus. In hypertrophy the pain is not so severe as in stone, but is more of the nature of that caused by a distended bladder, and is relieved so soon as the patient commences to pass his water. In cases of stone, the pain is greatest as the patient ceases to urinate, and at the time the bladder is contracting; the stone is then brought in contact with the delicate, highly sensitive, and inflamed vesical mucous membrane of the neck of the bladder; because in both hypertrophy, and in vesical calculus, there is more or less cystitis; but the cystitis is more distressing in calculus. In this disease the pain is excruciating, if the patient attempt to ride horseback, or ride in a jolting carriage. Any movement of the patient increases the pain in stone in the bladder; while this is only slightly the case, if at all in hypertrophy of the prostate. In this affection the pain is more that of distress, and is experienced during the night; the old man with hypertrophy passes twice as much water at night, and during the early morning, as he does during the day. The patient with calculus is less disturbed at night, because while asleep the calculus remains in one place, and is not moving about, and irritating the bladder. The stream of water, or rather the absence of a stream, is notable in hypertrophy. The urine dribbles, and is not projected as a stream, and the urine may be clear or turbid. But in stone in the bladder, the urine is often slightly bloody, especially after violent movements. particularly if the calculus be of the oxalate of lime variety, which however is rare.

Hypertrophy may be readily distinguished from stricture by the character of the stream of urine, which may be excessively small, but which is usually propelled in a forcible stream. A most valuable means of diagnosis of hypertrophy, is a digital examination by the rectum; when the prostate, if enlarged, may be distinctly felt, and its size often quite accurately determined. But you should bear in mind, that there may be a very considerable median hypertrophy, and yet a digital examination per rectum will not reveal any remarkable increase in the size of the prostate. Always examine the supra-pubic region to see if there is much distension of the bladder. The constant congestion, to which all the surrounding organs are subjected, by compression of the prostatic plexus of veins, causes compression of the dorsal vein of the penis, and turgescence of the penis, and erections of this organ are not of infrequent occurrence in old men affected with hypertrophy of the prostate. This added to a full bladder, and constant distension of the hæmorroidal veins, the whole genito-urinary system is kept in a state of passive congestion..

We will suppose that you have made a digital examination per rectum, and satisfied yourself that your patient has hypertrophy. But his bladder is distended, and he has quite frequently a dribbling of urine, and he comes to you fully impressed with the belief, that something should be done to relieve him, of what he has been told, and what he thinks he plainly sees, is an incontinence of urine. You tell him that his bladder is full, and that the dribbling is caused by an overflow, but he may not believe you. The way to convince him, is to give him this soft, flexible French catheter, that will worm its way through the urethra in most cases of hypertrophied prostate, and show him how to pass the instrument, because sooner or later you must teach him how to use a catheter. Request him previously to make water before you, as this will show the greater or less force with which he can urinate, and also the size of the dribbling stream; and besides, if he or you should introduce a flexible French catheter, which goes in by simply pushing, and draw off a considerable quantity of urine after he supposes he has already emptied his bladder, his astonishment will probably be great, and his confidence in you increased. But be careful not to draw off more than half or less of the urine at one time; as fatal collapse has been known to occur, after completely emptying the bladder of a patient with hypertrophy of the prostate, in a standing posture. Henry Thompson relates a case of this kind in which the patient suddenly fell dead from syncope in a physician's office when six pints of urine had been passed; and a criminal action was brought against the practitioner for manslaughter; but as Thompson remarks, nothing could be more monstrous than to make this error the ground for a criminal action. Lord Hale is said to have remarked from the bench, in a case of death after using a rectal bougie: "God forbid that any mischance of this kind, should make a person guilty of murder or manslaughter."

But gentlemen, after what I have told you, I am sure you will always leave a certain amount of urine in the bladder of a patient affected with hypertrophy of the prostate. Gradually, however, a larger quantity can be withdrawn each day, until finally the bladder can be completely emptied each time. It is desirable that the patient should be reclining, and not standing in the erect position, although in this position the urine passes more readily. Now let me recall to your mind some of the facts that should govern you in the passage of a catheter in such cases. By referring to the little diagram that I have drawn for you on the black-board (see Fig. 1), you will see that the route to the bladder through the prostatic portion of the urethra, is an up-hill route; and that unless the catheter you use, is considerably bent near the point as the elbow shaped gum elastic catheter which I show (see also Fig. 1),

and which is a French instrument, that the point of your instrument will be stopped by the central median hypertrophy called the middle lobe. Nothing approaches more nearly to the catheter coude than the beak of a lithotrite, and which instrument is another evidence of the value of short curves in urethral instruments, as I endeavored to show you in a preceeding lecture. The principle then of introducing a catheter, is quite different in hypotrophy of the prostate, from that which should govern you in the case of stricture, or in the case of a healthy urethra, which maneuvre some of you have had an opportunity to repeat after me on the cadavre in this lecture room. If you have an English flexible catheter, bend the point in warm water, and also curve slightly in an opposite direction the rest of the catheter, and then immerse it in cold water, when the shape will be better retained. Pass this instrument without a stylet, depressing the proximal end of the catheter, when the distal end reaches the prostatic portion of the urethra, and it is quite probable, if you use proper care, that the instrument will glide smoothly on into the bladder—that is in case of the usual form of hypertrophy. Should there be hypertrophy of one of the lateral lobes, then the elbow shaped catheter will not answer, neither will your English catheter serve your purpose probably; and this new vulcanized rubber catheter is the one with which you are likely to succeed. Possibly it may be desirable for you to use this prostatic guide of Otis (see Fig. 2), which will enable

FIG. 2.

you better to pass the soft, and extremely flexible rubber catheter; or Squire's vertebrated catheter may be of use if you have it. But suppose you should have such a case of hypertrophy of the prostate, as to baffle all of your skill and that of some professional friend, who sees the case with you. Do not, as I told you about stricture, give opiates and a warm bath, because you will only make the case all the worse probably. *Overflow* may occur and partially relieve the patient; but it is imperative to draw the water off—not all, but some of it, leaving always at first some residual urine. You know that I told you about the aspirator in a previous lecture. You may then aspirate your patient as often as necessary and without harm, so that puncture of the bladder through the rectum, and above the pubes in the old fashioned way with a curved trocar is no longer proper, only under very exceptional circumstances. (Dieulafoy was the inventor of this, see Fig. 3, aspirator, but there are several excellent modifications of it; the one I use is that known as Potain's, and was made by Luer, in Paris. But few better instruments

are made anywhere than by Americans.) Once you have learned your patient the use of the catheter, he will generally give you very little additional trouble; and if he has cystitis, you should learn him also to wash out his bladder, as I described to you on a previous occasion. The old gentlemen should wear warm clothing, as merino or flannel under garments, according to the season of the year, and avoid as much as possible exposure to cold and dampness. He should withdraw his urine at regular intervals, avoid excess at table, and be moderate in the

FIG. 3.

use of wine, or other spirituous drinks. He should occasionally use a mild aperient, as confection of senna, tamar indian, or he may use a moderate dose of crab orchard salts, sulphate of magnesia occasionally in summer, and drink moderately of vichy water, when his urine deposits lithates, and there is much congestion about the hæmorrhoidal veins. He should avoid long rides in jolting carriages, and exercise each day moderately on foot. At our next lecture, I shall try to instruct you in some of the leading features of stone in the bladder.

LECTURE VI. STONE IN THE BLADDER.

GENTLEMEN:

No subject in surgery has received more prominent attention than stone in the bladder. Up to the time of the French surgeon, Civiale, who about 1822 first demonstrated before a commission of the French Academy of Medicine, that a vesical calculus could be removed by crushing it to a fine powder in the bladder, there was no known method of cure for calculus disorders, except by a cutting operation known as lithotomy. This operation had for centuries appeared to merit great consideration on account of the frequency and distressing character of vesical calculus; and from a remote period, no operation seemed to command for the successful surgeon, such eminent title to distinction, on account of the exceptional surgical skill thought to be required to cut for stone. From the most distant times to a comparatively recent period, indeed from the far removed times of Hippocrates, of Celsus, of Frere Jaques, a French monk, of Johannes de Romanis and of Marianus Sanctus, his pupil, and of Pierre Franco, the inventor of the supra-pubic operation, and from the later periods of Chelsenden, of Dudley, and of Dupuytren, lithotomy has been made the occasion of a grand and ostentatious display, such as no other operation has received. But you will think lithotomy a wonderful operation, when I tell you of the remarkable success of Chelsenden, who about 1729 first established this operation on an accurate anatomical basis, and cut two hundred and thirteen cases of stone with only ten deaths, and of the success of the most eminent of eminent lithotomists, our American surgeon Dudley, of Kentucky, who operated on two hundred and seven cases with only six deaths. These facts deeply impress us with the importance of lithotomy, even in this age of advanced surgical knowledge; when this operation is already largely superceded by that known as rapid lithotrity.

I shall endeavor to teach you simply the most practical and prominent features of stone in the bladder. It would be quite out of place in this course of lectures, to detain you with an extended history of calculus, and of that of the operation of lithotomy, which forms the bulk of the material that has been written about stone.

The surgical parade that has been made over lithotomy is fast drawing to a close, and the less brilliant, less dangerous, and more effective methods of crushing stone are gaining favor with surgeons. But lithotomy with the record furnished by Dudley, and that by Chelsenden, the English surgeon at the beginning of the second quarter of the last century, are results that cannot be surpassed in more recent times.

Stone in the bladder occurs most frequently at the two extremes of life, and proportionately to the whole number of cases, is most commonly met with before the age of puberty. It is during this period of life, before the full development of the prostate, that lithotomy is attended with its best resulte, of not more than one death in about every sixteen cases. Calculus is more rarely seen during middle life, and becomes quite frequent during old age; but probably one half of all the cases observed are seen in children before puberty.

The geographical distribution of patients affected with stone in the bladder is of remarkable interest. According to Professor S. D. Gross, in his work on the diseases of the urinary organs, in the United States vesical calculus is far more common in Kentucky, Virginia, Tennessee and Ohio than in any other parts of the Union This affection occurs often also in Missouri, Indiana, Maryland, Pennsylvania and northern Alabama. It would seem that in other parts of the Union, vesical calculus is rare; certainly so far as my observation, and that of my colleagues in Colorado extends, I believe stone in the bladder to be one of the most infrequent diseases in this state. If calculus disease is much more frequent among the poor than among the rich, which is generally asserted to be the case in England, and in India; this may, in these and some other countries where it is commonly seen, he explained partly by the poorly nourished condition of the children of the laboring classes, among whom the complaint most frequently occurs. The abundance of cereals, and cheap beef of this country together with the general well-being of the laboring classes of Colorado, leave us no grounds of apprehension about the frequency of vesical calculus in this state. The influence of climate, and of certain modes of life, would, one would think, exercise a certain effect in the production of the calculus disorder. Whatever our surmises may be concerning this matter, there is no positive, or conclusive evidence to show that such is the case. We know that the disease is most frequent in some parts of the world, and we also know, that among a certain class of the population, calculus is most prevalent; but any accurately known cause for such, we are entirely ignorant of, because under the same conditions of climate and modes of life in other countries, the disease is almost unknown. Yet a more careful study of the influence of climate and food may aid to discover the cause of calculous disease; but the influence of these two seemingly probable causes, are not, as yet, satisfactorily proven. The rheumatic and gouty diathesis is highly conducive to the deposit of the lithic or uric acid variety of stone; and we know that strictures of the urethra, hypertrophy of the prostate, and, indeed, any cause that favors the retention of a certain quantity of urine in the bladder, and the ammoniacal decomposition of this fluid, and the deposits of the phosphates

from the urine, favors also the formation of calculus, especially if any already formed calculus concretions should exist, or if any foreign body should serve as a nucleus for stone,

This is a subject of such vast proportions, that if I should attempt to describe it in a manner commensurate with the attention that it has usually received, it would take many lectures and much research to dispose of the subject in a manner entirely satisfactory and creditable to myself, and then I do not think that I would thereby afford you the most practical instruction, as to the manner of promptly recognizing the disease and of treating it. Besides I labor under the disadvantage, of not being able, owing to the paucity of cases of vesical calculus in Colorado, to illustrate from recent personal experience, or from that of any of my colleagues, many interesting points that it would be proper otherwise for me to allude to.

For all practical purposes there are only three principal varieties of vesical calculous, and usually the nucleus of stone is supposed to be formed in the kidney, and to descend from the kidney along the ureter into the bladder. This nucleus is commonly composed of uric acid, or of oxalate of lime, and should it be retained in the kidney instead of descending to the bladder, fatal obstruction would occur; as renal calculi are beyond the reach of surgical aid. The usual varieties of stone are, in the order of their frequency: 1st, those composed of uric acid; 2nd, those formed of the phosphate of lime and of ammonio-magnesian phosphates; and 3rd, that variety known as the mulberry calculus, and composed of oxalate of lime.

You have had occasion to observe that sometimes, during an attack of fever, or in certain conditions of the system, there appears in the urine a red brick-dust deposit, or sometimes this deposit looks like particles of cayenne pepper, and the bottom, and sides of the chamber are stained with this peculiar looking deposit in such a manner as to to be very noticeable to the least observing of persons. This is uric acid, and in combination with sodium, calcium, or ammonium, forms what is known as the urates or lithates, uric acid and lithic acid being synonymous terms. Normal urine contains usually one part of urate of sodium to the one thousand parts of urine. When urate of sodium is in excess in the urine, as in certain fibrile affections, in pneumonia, in rheumatism, in gout, and frequently in congested conditions of the portal circulation, this deposit of the urates occurs. The coloring matter which gives the purplish appearance to the urates is due to purpurine, which is soluble in alchohol. The common form of urate is that of urate of sodium, which does not deposit in the bladder, because this salt is soluble in the warm urine, but deposits on the bottom of the chamber when it has cooled. But uric acid

uncombined forms a most frequent variety of calculus, and is the most frequently seen of all calculi. It is of a brown or mahogany color and sometimes slightly tuberculated on its surface, but commonly smooth, and from the size of a buckshot to a hen's egg, but occasionally very much larger. A section of this stone shows concentric layers around a central nucleus, and of different colors. Uric acid calculus is insoluble in water, but is readily dissolved by an alcaline solution of potassa. The alcalinity of the urine tends to dissolve small acid calculi like uric acid gravel, which, if not discharged by the urethra, may become the nucleus of a phosphatic calculus. There is more or less cystitis accompanying stone in the bladder, and if there be stricture of the urethra, or any other obstruction of the urine, the residual urine undergoes ammoniacal decomposition, and phosphatic deposits increase, which rapidly form around a nucleus of uric acid, or of oxalate of lime.

The accretion of uric acid so as to form a gravel deposit, which is passed with the urine, accumulates in the bottom of the chamber like little particles of sand, and are about the size of fine bird-shot. You will readily infer, that the causes which tend to produce the uric acid variety of stone, are such as predispose to the development of the lithic acid diathesis. A study of the causes of this predisposition, may, if attentively and logically pursued, lead some day to a better understanding of the cause of the most frequent variety of vesical calculus. Uric acid calculi occur most frequently in young persons, and in children. According to Thompson about three fifths of all the cases of stone are of uric acid; and according to Prof. S. D. Gross about one fourth or one fifth are of this variety.

The uric acid calculus is usually hard and compact, and yields a distinctly clear "click" to the steel sound or catheter. The phosphatic variety of stone is very rarely composed alone of phosphate of lime, but unites to this the triple amonio-magnesian phosphate, and this combination is what is known as the fusible calculus, and is one of the commonest kinds of stone met with in persons past the age of fifty years. Prof. S. D. Gross states that this calculus forms about one twelfth of all calculi.

This kind of stone is comparatively light, and is sometimes porous; readily breaks and crumbles, and forms occasionally with wonderful rapidity, because the conditions under which it develops are so favorable to its growth. These conditions are the presence of an already formed calculus in the bladder of a patient afflicted with hypertrophy of the prostate, or stricture of the urethra; the constant presence in the bladder of residual urine; the existence of cystitis, and the accumulation of more or less vesical mucous, pus or blood. The rapid accretion of the vesical mass may be composed largely of all these substances, and the phosphates under such

conditions deposit abundantly, hence the remarkably large size which such stones may acquire. No other kind of stone ever gets to be of such enormous size as this kind, and which is never seen now of the size described by the old writers on stone, because of the facilities for detecting, and ridding the patient of calculus.

The third variety, or oxalate of lime calculus, called also the mulberry calculus on account of its fancied resemblance to this fruit, is the hardest, most dense, and irritating to the bladder of all vesical calculi. The sharp and hard asperities on the surface of this stone, cause it to produce more distressing symptoms than a uric acid or phosphatic calculus of many times its size. If an oxalate of lime stone is over an inch in diameter, it is exceedingly difficult to crush it, and is so resisting as to test the metal and strength of the best made lithotrite. But fortunately this kind of calculus is of infrequent occurrence, and is not met with oftener than about once in every seventeen to twenty cases of stone in the bladder; and when struck gives the clearest and most distinct sound of any calculus. There are some other exceedingly rare varieties of calculus which are of a composite character, which in addition to uric acid, or oxalic acid or phosphates, may have associated with them hippuric acid, or cystine, or xanthine. Hippuric acid exists largely in the urine of the horse, hence its name, or in the urine of herbivorous animals, and exists normally in the urine of man in very small quantities, but it is said to be much increased after taking benzoic acid; and in a person having uric acid calculus, hippuric acid may from one of the constituents of this kind of calculus. Cystine sometimes forms a calculus; urate of ammonia is an exceedingly rare species, and calculi of pure phosphate of lime have been removed from the bladder occasionally, but are also very rare. The kind of calculus with which a person is affected, may be inferred from the nature of the deposits observed in the urine. Uric acid and oxalate of lime calculi are generally single stones; but while this is particularly the case with the oxalate of lime calculus, yet there are some notable exceptions to the uric acid stone. Dr. Gross relates that, Dr. Physick extracted from Chief Justice Marshal of the Supreme Court of the United States, upwards of one thousand uric acid calculi, from the size of partridge shot to that of a bean; but this is the most astonishing case of the kind on record. The phosphatic variety of stone is often multiple, and the surfaces are worn into facets by rubbing together.

Sometimes calculi are formed in the little sacculi of the bladder, of which I have in preceeding lectures spoken to you about, and become retained immovably in one position, and are then known as sacculated calculi. The most interesting specimen of this kind, is shown in Dr. Gross' work on diseases of the urinary organs in an engraving, and which was a case observed by Dr. Peticolas, of Richmond, Va.

The symptoms of stone are often gradual in their approach, and differ somewhat in the child from those observed in the old man affected with hypertrophy of the prostate. In the latter case, there is nearly always a certain amount of residual urine, and the stone is retained in the bas fond of the bladder, and is not apt to occasion so much pain after urinating as when the bladder is emptied, and the calculus comes in immediate contact with the highly sensitive and inflamed vesical neck. But the constitutional effects of the irritation caused by stone, the long continued and persistent muco-purulent discharge resulting from chronic cystitis, makes stone in the old man a much more formidable disease, and especially on account of the dangers of pyelitis, than calculus in the child. Yet the symptoms are generally milder in the decline of life, than before puberty and in the young man.

The pain of stone is a most characteristic and prominent feature of this disease. Formerly when old cases of calculi were more common than at present, on account of the greater promptness now in detecting stone in it earliest stages, and of the improved methods of treating it, neglected cases accumulated, and the proportion of middle-aged adults suffering from this disease was comparatively great. The keen, cutting and prolonged attacks of pain lasting for days, and recurring at irregular intervals after exposure to cold, or indulgence in some excess at table, was known as a "fit of the stone." This expression had a significance that gave it a vivid reminder of the tortures suffered by our ancestors, and which is but inadequately appreciated by us. It was not an uncommon occurrence for one neighbor to speak of another as suffering from a "fit of the stone." Such undoubtedly was the case in some parts of this country, as in Virginia and Kentucky, not later than two or three decades ago; and what must it have been during the time of Franklin, who preferred to endure his sufferings from stone in the bladder, rather than incur the risks of lithotomy, by the most skilful of French surgeons of his day.

In a child affected with calculus, you may observe that he is constantly pulling at his prepuce, which is very much elongated; and if he has just made water, he will grasp his penis and squeeze it, and pull at it, and give every evidence of discomfort, if not of actual suffering. This constant habit of handling the penis, and pulling at the prepuce, causes the glans to be unusually developed; and the child is frequently troubled with erections, which may in the parent induce the belief, that the child masturbates; and the real nature of the complaint may at first be over-looked. Finally the child, especially if of a nervous and impressionable temperament, will manifest in the most unmistakable manner, evidence of the greatest suffering during, and particularly after

passing his water. He may seize his penis and scream and dance about in the greatest agony; or he may place himself on his back, and elevate his hips while urinating; or cross his thighs, or lean to one side or the other, or bend forward, or sometimes as the adult affected with stone squat; and in fact place himself in numerous and varied postures while making water, in order to lessen the pain of micturition. The stream of urine is often interrupted and just as the last few drops of urine escape, with it may be a few drops of blood; and the suffering of the poor little fellow is apparently horrible, as he pinches and presses on the head of his penis, and pulls at the prepuce. There is tenesmus of the bladder, and with it tenesmus of the rectum, which is prolapsed during the efforts of straining. Children often suffer and endure much more in this disease before they are seen by a physician, than an adult, who on slight feeling of discomfort or of pain, usually makes known his complaints.

An adult affected with calculus is better able to give an accurate account of his sensations. One of the most important facts connected with stone in the bladder, is that the pain is located in the glans penis, and in the urethra near the orifice, as sharp and darting pains, or sometimes only as an itching or pricking sensation. The pain is also keenly felt at the neck of the bladder during micturition, and irradiates thence to the groin, and down the thighs into the testicle, which sometimes may become inflamed and swolen as in orchitis from gonorrhœa. Any movement of the body of a violent kind, causes sometimes intense pain; riding horse back or in a carriage, especially over rough roads, occasions the keenest suffering. Sometimes pain is felt in the region of the kidneys. There is a fulness and weight in the perineum, and if the rectum be distended, the suffering from stone is increased. Any excess of the table, and indulgence in wine or brandy is apt to bring on a "fit of the stone," which does not subside sometimes for several days, and then only after absolute rest, and the use of demulcent and alkaline drinks and the most unstimulating diet. The gouty or rheumatic diathesis very much predisposes to these "fits of the stone." Cystitis uncomplicated with stone, does not usually occasion pain except at the bladder and about its neck. In hypertrophy of the prostate or in prostatitis, the pain is more of a discomfort, and is felt about the perineum or rectum; but in calculus there is a severe and sharp pain in the glans penis after urinating, which is characteristic and distinctive of stone. I have told you all that I can recall to mind about pain; now let me direct your attention to the characteristic symptoms offered by a careful observation of the stream of urine. You know that I told you that in hypertrophy of the prostate, that the form of the enlargement of the middle lobe, as it is called, is sometimes pedunculated, and acts like a ball and socket

valve and interrupts the flow of urine. So that the interruption of the stream of urine from stone in the bladder in an old man, is not so good a sign of calculus, as in the child or in an adult under the age of fifty-five years; below which age hypertrophy of the prostate is rarely, if ever seen. If in a child, or in a young or middle-aged adult, the stream of urine suddenly stops, and does not flow again until the patient changes his position, so as to displace the stone from the vesical orifice of the urethra, which is closed by it, then you may note this stoppage of the stream of urine as an important symptom of calculus. In fact a stone may lodge in or against the vesical orifice of the urethra, and become impacted so as to cause retention of urine; and require to be pushed back into the bladder with the beak of the sound. A sacculated calculus may remain for years without occasioning any disturbance, until suddenly by some violent movement it becomes dislodged, and immediately, or very soon the symptoms of stone are manifested.

The most conclusive evidence of stone in the bladder, is furnished by "sounding," which is the introduction of a steel sound, or silver catheter of very short curve, into the bladder, and by striking the stone a quick sharp tap, a peculiar and characteristic sound is produced, which may be heard several feet away from the patient. In children, or in adults the introduction of the finger into the rectum, aids in recognizing the stone, and often of ascertaining its size and shape. The uric acid, or oxalate of lime calculus, gives a clear sharp ring when struck. The phosphatic stone, which is soft, and easily broken, and not so heavy and compact as the others just mentioned, gives a dull sound when struck. It is necessary to feel the sound strike the stone, as well as hear the "click" or "ring" of the instrument against it. There have been many mistakes made in "sounding" for stone, and numbers of cases of supposed calculi have been subjected to the operation of lithotomy, when no stone was found in the bladder. This is certainly a very awkward mistake, but it has occurred repeatedly, and therefore it is well to be sure that your sense of hearing and your tactile sensations do not deceive you; and mistake the spine of the ischium, or the sacrum for a stone. Be sure also that the instrument gives a sound, distinctly audible to others as well as to yourself, and that you feel with your sound the stone; and vary the position of the patient, so as to change the position of the stone.

Before introducing the instrument, which may be a solid or hollow steel sound, or a silver catheter of short curve, inject a small quantity of water into the bladder, two to four ounces only, or if the bladder contains a small quantity of urine, this is not necessary. Raise the hips of the patient by putting a pillow under him, this will throw the stone away from the neck of the bladder and avoid unnecessary irritation. After passing

the sound, turn it to one side, and then to the other, and if the stone is not felt, turn the beak of the instrument towards the bas fond of the bladder, when the calculus may be found. If a catheter is used, as the urine escapes, the stone is brought to the neck of the bladder, and may be readily found. If you have failed to find the stone, this is no evidence, always, that there is none; so try again in a few days. Always in the case of children, and sometimes in adults, give ether so as to thoroughly relax the system, and facilitate your exploration.

The next lecture will be on the treatment of stone in the bladder.

INFLAMMATION.

By William Henry Porter, M. D.,

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(*Continued from February number.*)

At this point it seemes best to consider briefly the various forms of surgical fever, for it as well as the local condition has to be taken into account in the general treatment.

There are three forms of constitutional inflammatory fever, 1st, the *Sthenic*, 2nd, the *Asthenic*, and 3rd, the *Irritative*, which may be termed true surgical fevers because they are always secondary to the local inflammation.

The way in which the local inflammation produces the general elevation of temperature has never been accurately determined, but it may possibly be accounted for by the rapid deterioration of the blood, caused by the rapid and incomplete metamorphotic changes in the tissues at the seat of inflammation, and the incomplete and slow elimination of these products from the system. Surgical fevers assume a great variety of types.

The surgical fever is influenced, 1st, by the extent and intensity of the process; 2nd, the vital importance of the part affected; 3rd, the amount of continued local irritation; 4th, whether it originate from external or internal causes. With a slight inflammation of the skin the symptoms are mild; with a wide-spread and erysipelatous inflammation very severe; with great local tension in a vital part, for instance the eye, larynx or intestine, the symptoms are severe. Surgical fevers are divided into three stages, the *invasion*, the *exacerbation*, and *decline*. The period of invasion is characterized by rigors and a slight depression, which often pass unnoticed. The period of exacerbation is characterized by a hot

and dry skin; elevation of temperature; pulse full, bounding, and increased in frequency. If a mucous membrane, the skin, or a glandular structure be affected, the pulse is full and compressible; if a serous membrane, the pulse is small and wiry; if a fibrous tissue, hard and full. The secretions are diminished or arrested, the urine high colored and acid, bowels confined, the tongue coated with fur, mouth clammy, great thirst, great languor, head heavy and hot.

The period of decline is marked by critical evacuations, from the skin by abundant acid perspiration, from the bowels by diarrhœa, from mucous surfaces from hemorrhage. The tongue cleans, the pulse improves, secretions become full, thirst lessens, strength and appetite return.

Points of differential diagnosis between

STHENIC,	ASTHENIC and	IRRITATIVE.
1. Occurs in healthy subjects.	Occurs in broken constitutions.	Occurs in those of a shattered nervous system.
2. Invasion slight.	Invasion marked and prolonged.	Invasion irregular.
3. Exacerbation sudden.	Exacerbation slow.	Exacerbation sudden.
4. Skin hot and dry.	Skin moderately hot or pungent and burning.	Skin hot and dry.
5. Pulse full and quick, increased 30 or 40 per minute.	Pulse feeble but quick.	Pulse slow, sharp, small.
6. Tongue coated with a white fur.	Tongue brown and dry.	Tongue coated.
7. No sordes.	Lips and teeth covered with sordes.	No sordes.
8. Cheeks not flushed.	Cheeks flushed.	Great heat of the head.
9. Eyes normal.	Eyes bright and staring.	Wildness of the eyes.
10. Little or no delirium.	Low muttering delirium.	Furious delirium.
11. Critical evacuations, generally watery.	Critical evacuations generally hæmorrhagic or diarrhœal.	Not often seen.
12. Recovery common.	Recovery doubtful.	Death from coma and cerebral irritation.

Great pains should be taken to diagnosticate accurately which of these three forms we have to deal with, as the treatment is different in each. Depressants are called for in the sthenic, stimulants in the asthenic, and opium in the irritative.

Inflammation may terminate in *resolution*, *liquefaction*, *suppuration*, *ulceration* or *gangrene*. In resolution and liquefaction there is a return to the normal condition without any special alteration either temporary or permanent in the part affected. The other methods of termination are more properly considered under their respective heads.

The *extension* of the inflammation may be: 1st, *locally by continuity*. 2nd, *by contiguity*; seen in joints where inflammation extends from one articular surface to the opposite. 3d, *through the blood and lymphatics;*

seen in erysipelas, pyæmia and septicæmia. 4th, *by metastasis*, suddenly changing from place to place, as in gout and rheumatism. 5th, *by sympathy*, as the orchitis which occurs in connection with mumps.

The *variety* of the inflammation is governed by the *duration*, *intensity* and *character*. The duration and intensity determine between acute and chronic, active, subacute and passive inflammation. Under character, inflammations are termed, *healthy*, *phlegmonous*, *congestive*, *unhealthy*, *circumscribed*, *diffuse*, *strenuous* and *specific*.

Inflammation is spoken of as being predisposed to by *age*, *sex*, *temperament*, *work*, *food*, *exercise*, *climate*, and *season*.

The local exciting causes of inflammation are either mechanical or chemical. The mechanical are *punctures*, *incisions*, *contusions*, *lacerations*, *fractures*, *dislocations*, sudden and forcible *distension* from pus, blood, or gas, *compression*, and *foreign bodies*. The chemical are *heat*, *cold*, *alkalies* and *acids*.

Treatment. First remove the exciting cause when recognized, for the inflammation cannot be subdued while it remains. The inflammation may have become so thoroughly established before removing the exciting cause that further treatment will be required. Speed and great gentleness is the rule in removing the exciting cause. Over officious interference, wide probing or rough manipulation *must* be avoided. Splinters, nails, needles or fragments of bone are to be abstracted either with your fingers or forceps, in fact all foreign bodies are to be carefully and gently removed. In spontaneous or idiopathic inflammation the cause cannot be detected, and here we are forced to the symptomatic treatment. The case becomes protracted and often terminates fatally. Pathology now greatly aids us in making an accurate diagnosis of the lesion from the symptoms, after which treatment is no longer symptomatic, but may be directed toward the lesion, thus often enabling us to forestall the symptoms, and bring to a speedy recovery what might have become a protracted case. The ordinary methods of treatment are either constitutional or local or both combined.

The constitution may be acted upon by *general bloodletting*, *cathartics*, *mercurials*, *emetics*, *depressants*, *diaphoretics*, *diuretics*, *anodynes*, a *combination of these* and an *antiphlogistic regimen*. In cerebral irritations and inflammations with a very high temperature, if the patient be extremely plethoric, general *blood letting* may be resorted to, and followed by the most satisfactory termination, but under ordinary circumstances we can accomplish as much and more without it, and save the blood that will be needed during repair.

Cathartics are used simply to unload the bowels, to deplete the general system, to increase the activity of the liver and the intestinal follicles, to revulse by exciting a new action, and to stimulate the absorbents.

Cathartics are very serviceable and should be used early. They are of special service in inflammations of the brain and its membranes, the eye, ear, throat, respiratory organs, liver, skin, and joints, but strongly counter-indicated in inflammations or wounds of the alimentary tract or peritoneum. Stimulating enemata may be used to help their action. *Mercurials* are now used but little, except in syphilitic and chronic inflammations. *Emetics* as a rule are never used in surgery. *Depressents* are of inestimable value, and act by slowing the heart's action, lessening the momentum of the blood current both by the diminished heart's action and universal dilatation of the capillaries. There are a large number of drugs belonging to this class, but with aconite all that is desired can be accomplished. *Diaphoretics* are of service in lowering the temperature. *Diuretics* are to stimulate renal activity, which is apt to be sluggish with any inflammation. *Anodynes* are for the relief of pain which is itself enough to kill. Great care, however, must be exercised in using opium when the inflammation is within the cranial vault. *Antiphlogistic regimen* refers to a nutritious but non-stimulating diet, perfect rest and quiet. The *local* treatment is as varied as the constitutional, and may be *rest* and *position*, *local bleeding*, *cold* or *hot applications*, *fomentations*, *stupes*, *poultices*, *nitrate of silver*, *iodine*, *compresses*, *destructives* or *counter-irritants*.

Rest and *position* are of marked service in inflammations of the eyes and joints. *Local bleeding* can be accomplished by scarification, puncturing, leeching or cupping. *Hot* and *cold applications* are used to favor or promote resolution. *Poultices* are used when resolution fails and suppuration is inevitable. Now by the use of simple or medicated poultices suppuration may be fully established and ultimate recovery hastened. *Nitrate of silver* is of special service when a mucous membrane is inflamed. *Iodine* is less decided than silver. *Compression* is of great service in chronic inflammations. *Destructive agents* are to be used in poisoned wounds, and phagedenic ulcers. *Counter-irritants* are of marked service in chronic inflammations.

(*To be continued.*)

THE TREATMENT OF CHRONIC CATARRHAL INFLAMMATION OF THE MIDDLE EAR BY FLUID INJECTIONS.

By A. B. Kibbe, M. D.,

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The method of treating chronic inflammation of the middle ear by the injection of medicated fluids through the Eustachian tube, is one which is looked upon by different otologists with the widest differences of opinion. Some reccomend it highly, while others go so far as to maintain that its value is not only extremely doubtful, but that it may be productive of much mischief. Dr. Kramer stated at one time that fluid supposed to be introduced in this manner never reached the middle ear at all. This, however, was denied by Schwartze, Weber-Liel, Gruber and others, who proved by different methods that it did. This subject was discussed lately by the British Medical Association at length, and as usual, brought out much diversity of opinion.

Practically, there are but two methods of introducing fluids into the tympanum when the drum-head is intact. One is by the aid of the Eustachian catheter in which a few drops of the medicated fluid is introduced and then forced into the middle ear by inflation. Gruber's method is as follows:

"A proper quantity of the medicated solution is placed in a small blunt pointed syringe and injected in a suitable manner through one nostril, while at the same time the opposite nostril is held more or less firmly closed by the other hand of the surgeon. The degree to which the second nostril is opened or closed, will of course, regulate the amount of pressure exerted by the fluid and the distance which the substance enters the tube, or its mechanical effect can then be regulated by the amount of pressure used." He objects to the use of the catheter, because, as he states, the substance only touches a portion of the mucous membrane of the ear.

From what we know of the effects of various drugs locally applied to mucous membranes all over the body, it would seem most natural to suppose that their effect upon the mucous membrane of the middle ear would not be markedly different from what is produced elsewhere. We know that purulent discharges from the middle ear are best checked by

some form of astringent, applied directly to that membrane, through the perforated membrana tympani. Why the direction in which it is applied should make any difference in its effect, is beyond my comprehension. Burnett states that the cavity of the middle ear is emphatically an air cavity and resents the presence of fluid. On the same page he states that it may be used if there is evidence of inspissated mucus. Why should the inspissated mucus alter the sensitiveness of the cavity? True the injection would be of more benefit should mucus be present.

Buck in his work on the ear states that he has failed to find any better results by this form of treatment than by the simpler methods usually employed, but says that in certain complicated cases the introduction of remedies into the middle ear may be found to be advantageous. Gruber in an article on the subject in the *Monatschrift fuer Ohrenheilkunde Jahrgang* XIV, number 9, says, "No one pretends that mucus, or any other product of inflammation, left in the middle ear can really be 'dissolved.' A knowledge of the form and character of such secretions precludes that idea. But it is of great advantage to so alter them by means of fluids introduced through the Eustachian tube as to make them more loose and freely movable, so that they may be pushed aside or rendered less obnoxious."

The medicated fluids used are numerous. Von Troeltsch gives a large list to be used in this manner, and states that good results are often obtained by combining the injections of some medicated fluid with the injection of the vapor of warm water. The same author gives the strength of the various solutions as follows: sulphate of zinc, one to ten grains; chloride of ammonium, ten to forty grains; liquor potassii, four to forty drops; iodide of potassium, ten to sixty grains. These quantities are to be added to an ounce of water.

Weber-Liel recommends carbonate of soda, and its use has been followed by good results. I have used both fluid and vapor injections with, I think, some benefit. I do not follow this as a routine practice, but agree with Buck in thinking it adapted to especial conditions. When I am inclined to think the deafness is due to any collection of hardened matter I generally employ fluid injections. Various forms of vapor injections are also used, acetic ether, a solution of iodoform in chloroform, five grains to the fluid ounce, and iodine dissolved in chloroform, etc. The vapor of muriate of ammonia has also been highly recommended. I have used all of these, but prefer the solution of iodoform to any of the others. On the whole I believe that in the treatment of chronic catarrh of the middle ear, by fluid injections, we have a method of great utility if we are careful to employ it in the proper cases combined with the systematic use of inflation by Politzer's method.

MISCARRIAGE.—SEVERE, PROLONGED FOR NEARLY FOUR MONTHS.—UNRECOGNIZED PREGNANCY.—POSSIBILITY OF TWINS.—RECOVERY.

By Milo A. Wilson, M. D., Denver, Colo.

Mrs. W., aged 36, mother of seven children; was called to see her February 25th, 1880, 5 o'clock P. M., when she states that she had been "on her back" since early in the previous November, (1879), then nearly four months, suffering from almost a "flow," with pains more or less severe. She had had a "Magnetic," an "Eclectic" and a "Regular" physician before I was sent for. The first one passed his hands over her stomach, rubbed her legs a little, said there was not much the matter with her, she would soon be all right. The second made a uterine examination with instruments, said there was "nothing whatever within the womb," that it was "only swollen and inflamed a little," that she was not much sick. The third she had known in the East, he was a good physician, but full of liquor every time he called, so she discharged them all.

These "*doctors*" all have conspicuous offices in this city, and are doing their utmost to secure patients and *money*. I found this woman exceedingly weak; exsanguinated, emaciated, her features expressing the long continued pain and hæmorrhage she had undergone. Pulse 124, temperature 102°. Upon examination of the abdomen, the hypogastric and ovarian regions were found to be very tender and much swollen; the uterus distinctly recognizable, enlarged, painful to touch. Having no instruments with me, I could do no more than examine per vaginam, with the finger. This was sufficient, however, for it decided me upon a prompt plan of treatment. The lips of the os were soft, the canal permeable to the extent of first joint of the index finger, the cervix enlarged. Bimanual examination showed the body, (uterus), to be as large as if there were a four or five months pregnancy; the whole vaginal vault was very painful upon slight pressure; *fresh* blood was flowing quite freely, clots also present, pains sharp and intermittent, as in labor or miscarriage. All this was sufficient evidence to me that this woman's uterus contained *some* foreign body, which it was and had been for weeks, or months, endeavoring to expel; that this "*body*" was most probably a fœtus and that to save her life this expulsion must quickly be

assisted. I ordered ergot, an occasional dose of morphia, plenty of cold milk, beef tea, and left her for that day. Next morning, second visit, I was informed that the pains had been much more severe and "something had passed from her;" this was thrown into a chamber and saved, (for a wonder) and I found it to be *portions of a placenta* of two or three months growth; she then remarked that "during last December something peculiar had been passed, she *knew* it wasn't merely blood, thought likely it was a very young baby." The cervical canal being insufficiently dilated, I removed the vaginal clots, employed the tampon and went after a tent and assistance, as, from her anxious, fretful condition, I feared ether might be necessary.

That afternoon, with the kind assistance of a medical friend, a proper-sized sponge tent was introduced, the vagina again tamponed, and, although somewhat hazardous to do so under the circumstances, left to remain all night. At morning visit I had also prescribed quinia in three grain doses, with dilute sulphuric acid, simple syrup and acid infusion of roses, every four hours. Following morning the tent was removed, the cervical canal found dilated to about the diameter of a silver half-dollar. With the aid of a good light, a bivalve speculum, a tenaculum and the small end of a *uterine depressor*, (which was passed within the cavity and used as a "scraper"), a bag of water was soon ruptured, very quickly followed by a fœtus of, apparently, about four months, shortly afterwards by *its* placenta, perfectly normal. No ether was given. All uterine and vaginal clots were thoroughly removed, ergot administered, a binder, compress and cold cloths employed, weak tepid carbolated injections ordered. She made a very rapid recovery, no pelvic inflammations nor complications supervening, whatever.

During all the time I saw her there was no odor, nothing offensive in all that was expelled from the uterus and vagina; nor was there any necessity for deodorizing, or antiseptic injections at any time. This patient positively and repeatedly asserted that she was *not* pregnant, nor in fact, could I learn that there was at *any* time, *any* of the ordinary symptoms of early pregnancy. I feel sufficiently charitable towards the three "doctors" who preceded me in the case, to suppose that the diagnosis could not so readily be made when they saw her, as at the time when I did; nevertheless, I can not avoid thinking that the proper "Regulation of the Practice of Medicine" by the State Legislature, might have saved this patient many weeks of suffering, to say nothing of the great danger in which she was so long held by incompetent men.

A puzzling but important question presents itself in the history of this case. Was it a *twin* pregnancy? In the first place, *she* "saw something" which was not clotted blood, passed from her in December,

and which, since her recovery, she considers was a fœtus of a very indefinite, early stage of growth. Then, at my second visit, I saw and examined portions and shreds of a placenta recently expelled and laid aside in a vessel. This was *fresh*, not at all decomposed. She stated, further, that menstruation had been regular during the whole period; the hæmorrhage and pains began early in the previous November. Could not this "something" which she saw early in December, have been a fœtus, expelled as a result of the abortion going on since November? But *its* placenta remaining attached to the uterine walls, increasing normally in growth, the abortion still continuing, it was forced without, or part of it, and was that which I saw at my second visit. Then when this abortion or miscarriage was completed by my manipulations, there was *another* perfect placenta and fœtus, as already stated. The first placenta may have been præ-via, its circulation and nutrition kept up, thus accounting for its non-decomposition, the pain, hæmorrhage, etc.

CASE OF MALIGNANT OR FATAL JAUNDICE, WITH REMARKS.

By W. R. Whitehead, M. D., of Denver.

The following case I believe to be of considerable interest, on account of the extreme rarity of the disease, which is of short duration, and invariably fatal, and which is generally thought to be due to blood poisoning.

Case. James Sheron, locomotive engineer, aged about forty years, was seen by me for the first time about noon on Tuesday, January 31st of this year. He had been confined to his bed a week or ten days previously, and was seen by another physician a few times before I was called, and who gave him morphia hypodermically, to relieve a severe pain in the regions of the stomach and liver. The skin of the abdomen, and over the pit of the stomach was excoriated from repeated applications of mustard, or other irritants. He was jaundiced; pulse very slow, full and strong; he vomited repeatedly a thin greenish fluid of bile, that irritated his throat, and of which he complained. There was soreness in the epigastrium, and right hypochondrium; the abdomen was soft to the hand, only painful, however, in the parts named. I could feel no lump, tumor, or knot; the liver could not be felt, neither could the gall bladder. From a careful, and prolonged examination of the abdomen nothing was re-
vealed of the nature of the complaint, except an extremely irritable con-

dition of the stomach, and duodenum. He had slight transient pains about the shoulders, hip, and some other joints, which before I saw him were severe, and he attributed to rheumatism. There was no pain in the right shoulder at this time. Urine scanty, thick and brownish; he was obstinately constipated, having had no movement from his bowels for a week or ten days; his pupils were widely dilated; his tongue was dry and foul; he was restless, and had slept but little for several nights; he was regular and temperate in his habits; and was in apparently good health, and felt well until a few weeks ago I saw him again about 5 o'clock P. M.; condition same. Prescribed at noon lime water and milk; and at the afternoon visit, fifteen grains of Dover's powder; which he retained, and slept well.

Wednesday, February 1st. Saw him morning and evening; vomiting continued as day before, but was less frequent; local pains of the abdomen continued; lime water and milk, champagne prescribed to be taken a sip at a time, with cracked ice to allay nausea; he drank half a bottle. Thirst very great, and prescribed dilute phosphoric acid in twenty-drop doses with water, to quench thirst. I did not suspect the nature of his disease, but believed the complaint to be gastro-enteritis, and also a reversed peristaltic action of the duodenum He complained once of the taste, and smell of fæces in the vomited matter.

Thursday, February 2nd, Condition about the same; at the forenoon visit prescribed eight grains of calomel to be given to him on the tongue. I saw him about five o'clock P M.; he had several copious evacuations from his bowels. One of them I examined, which was of the consistence of a poultice, dark brown, and slightly streaked with blood. He was weak, and his pulse had less volume, but was not accelerated. Milk punch; champagne in small quantities; hypodermic injection of morphia; prescribed in addition, to be taken after some hours one-eighth of a grain of morphia in solution to be given every two hours against pain, and to counteract looseness of bowels.

Friday, February 3rd. No nausea or vomiting; skin clear, and the white of the eyes almost free from any yellow tint; patient felt much better, and relished his milk punch; not so much soreness over the stomach and region of the liver; I felt very much encouraged, and attributed the improvement to the calomel. Prescribed milk punch and beef tea; gave a hypodermic injection of morphia; this was about eleven o'clock A. M. About five o'clock P. M., I found that he had passed some bright red blood from his bowels, and which saturated part of a sheet placed under him; Squibb's fluid extract of ergot, thirty drops every two hours; the morphine mixture continued; and first dose of ergot given hypodermically; milk punch.

Saturday, February 4th. At morning visit found him with very small quick pulse; he was dull, and hard to arouse; collapsed; he had passed about a pint of blood from his bowels. Same treatment continued; about six o'clock P. M. Dr. W. H. Williams saw him with me; same treatment continued, with the addition of broth made of chicken and barley. The patient was dull, and very hard to arouse; and had on this day and previously shown slight delirium of a quiet kind; the ergot and morphia were given at much longer intervals.

Sunday, February 5th. Saw him about eight and a half o'clock A. M.; surface of body cold; pulse quick, small and weak; no more hæmorrhages from bowels; skin quite jaundiced again; abdomen not distended, but soft; noticed purpura hæmorrhagica of both feet and ankles, and small petechial spots on the legs, and about the seat of the hypodermic punctures, about eleven o'clock A. M., Dr. Williams saw him a second time with me; condition unchanged, hard to arouse; stupor; I saw him in the afternoon, he refused to take his nourishment, or took it with great difficulty.

Monday, February 6th. Apparent inability to use the right side of his his body; increased stupor; pulse quick, and very weak. Died at three o'clock P. M.

It was not until towards the closing scene of this fatal case, that the disease was recognized, and this is not astonishing, when it is known that all the earlier symptoms so completely masked the nature of this very infrequent malady, that unless special attention is called to it, a mistake in diagnosis is inavoidable. I believe, therefore, this case to be an important addition to the comparatively small number of cases that have been published. The disease, I believe, is fully typified in the symptoms related; but I made the most strenuous exertions to procure, at least a partial post-mortem examination of the case, and was intelligently assisted in these efforts by a gentleman, a friend of the family; but our efforts were unavailing. I regret also to say that I did not have an examination of the urine made, to determine the presence of leucine and tyrosine. Both of these substances are the products of the decomposition of animal substances, first found in putrid cheese, and are the result of the action of ammonia on one of the compounds of caproic acid.

The presence of leucine and tyrosine in the urine is believed to be characteristic of this disease, and to aid in forming a diagnosis; and crystals of these substances are met with in the liver after death. But the distinguishing features of this rare disease, as shown shortly before death, resemble one of those fearful tragedies acted on the stage, of which real life is so replete, and in which the plot is not revealed until the curtain is about to fall.

This disease is also known as hæmorrhagic icterus, as diffuse parenchymatous hepatitis; but a more accurate definition, derived from the typical anatomical characters, is that of acute yellow atrophy of the liver. Flint in the latest edition of his work on the "Practice of Medicine," states that "it is a rare disease, the recorded observations not exceeding two hundred, according to Thierfelder." whose collated cases would appear to have been published so recently as 1878. Flint remarks that "the symptoms are not diagnostic of this disease prior to the occurrence of the grave toxæmic phenomena, namely, delirium, hæmorrhages, etc., in connection with jaundice." The same eminent author still further remarks that "it is questionable whether this disease ever ends in recovery." "Cases of recovery," he adds, "have been reported, but there is perhaps, more probability that, in these cases, there was an error in diagnosis, than that the disease really existed, and terminated favorably." Goodeve in Reynold's "System of Medicine" (p. 359, vol. III: Lippincott, 1871) states, "A very small number of cases of malignant jaundice recover, and it is doubtful if those that have done so were instances of yellow atrophy. In the earlier stages, the signs are not sufficiently established, to enable an opinion as to the real nature of the disease to be formed with confidence." Acute yellow atrophy of the liver is anatomically characterized by a rapid fatty degeneration of the hepatic cells, and without any appreciable increase of the connective tissue elements. Cirrhosis on the contrary is a chronic interstitial hepatitis, and particularly marked by an increase of the connective tissue, and development of fibrous tissue. The element of chronicity in cirrhosis, in this development, is prominent; and the result is increased density, and firmness of the diseased hepatic structure.

In yellow atrophy blood poisoning is assigned as the cause of this disease, by Budd, Frerichs, Murchison, and others. The pathological changes are rapid, and the destruction and softening of the liver are conspicuously in contrast with cirrhosis. One disease is acute, the other chronic; one occurs suddenly and the other is long preceeded by characteristic local and general symptoms; in both there occur intestinal and other forms of hæmorrhages; in one the hæmorrhages are inevitably constant; in the other they are occasional and may not take place at all. I simply mention these apparent differences because, an inattentive examination of such a case as I have reported, during the latter period of its progress, might, on account of the intestinal hæmorrhages, jaundice, and frequency of cirrhosis, induce the belief that the case was some form of this disease. According to Flint: "Of 143 cases analyzed by Thierfelder, 88 were women and 55 men. Of the 88 women 30 were attacked during pregnancy, and 3 in child-bed."

Let us examine a short synoptical sketch that I have made, from the

symptoms as described by Flint, in the recent edition of his eminently practical work; and let us see how they compare with the symptoms of this case: In acute yellow atrophy of the liver, the development is abrupt or there is a short prodromic stage; symptoms of gastro-duodenitis; after from three to five days jaundice marked, but not intense; intense cephalalgia and delirium; delirium active, or quiet wandering; convulsions in one-third of the cases; stupor, succeeded by coma; pupils usually dilated; pulse slow, then rapid, fluctuates, becomes quicker, smaller and more feeble; during middle period of disease absence of fever, some increased heat of skin at first, or during delirium; hæmorrages from stomach and bowels; petechiæ and ecchymoses; pain in epigastrium and right hypochondrium, and increased on pressure; constipation; stools green, and bilious, dark with blood, sometimes clay colored at first; urine contains biliary salts; urea notably lessened; leucine and tyrosine in urine; coolness and dryness of surface except during delirium; duration short; termination fatal.

ORIGINAL TRANSLATIONS.

THE HEREDITARY TRANSMISSION OF SYPHILIS.

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(*Continued from February Number.*)

IV. *Can the Mother of a Child inheriting Syphilis from the Father continue to remain healthy?*—A very large number of writers who accept, as we do, the direct transmission of syphilis from the father to the embryo, through the agency of the sperm cell, believe in the possibility of a subsequent infection of the mother, without inoculation from other sources. There are, for instance, many cases in which, after the birth of one or more syphilitic children, the mother, upon examination, presents more or less pronounced symptoms of syphilis. If in such cases —on the one hand owing to a denial of the existence of a primary lesion by the mother, upon the other hand through the denial, or the absence, of local infecting lesions on the part of the father—a perplexity should arise in relation to the source of maternal syphilis, it occasions the adoption by different writers of such modes of maternal inoculation as correspond but little with general experience regarding the process of the transmission of the syphilitic virus.

These modes of transmission are:

1. The infection of the healthy mother by way of the placental circulation, from a fœtus infected by the father.

2. The inoculation of the mother by syphilitic semen at the time of fecundation.

3. The inoculation of the mother by the semen of a man with latent syphilis, but free from other inoculable lesions, independent of fecundation.

We should say at once, before entering upon the lengthy discussion of these several hypotheses, that we cannot accept any one of the three above-named modes of inoculation. The most weighty reason for this is the following:

Each one of these modes must, if they are in general possible, have an effect every time, or at least in the majority of cases, if the necessary conditions are present. Consequently every woman who has carried in her uterus for nine months, or nearly that time, a syphilitic ovum, must become syphilitic; every woman who becomes impregnated by the semen of a syphilitic man must acquire syphilis; finally, every woman must become syphilitic who has any sexual intercourse with a man in whom the disease is latent, without other inoculable symptoms. A mere accidental effect of these peculiar ways of inoculation in an isolated case, and the non-occurrence of this same effect in the majority of the remaining cases, would have really no meaning. From the above detailed statement, taken from our own and foreign experience, it follows, beyond a doubt, that a woman can give birth to one, two, or even a succession of syphilitic children, and yet she herself must be declared as free from the disease. The bearing of one or more syphilitic children embraces, however, all three of these alleged conditions of inoculation: the long-continued sexual intercourse with a syphilitic man, the impregnation with syphilitic semen, the presence of a syphilitic fœtus in the uterus during the entire period of pregnancy. We have seen that women who are subjected to all these conditions not only manifest no evidence whatever of syphilis, but that they, on the contrary, enjoy good health, and have an excellent nutrition; that, finally, they give birth to healthy children when impregnated afterward with non-syphilitic semen.

But we shall also see, on the other hand, that those cases of infection taking place in one of the three above-mentioned ways, reported by those observing them, are not by any means sufficiently proven, and that they are all very readily explainable by the generally-accepted modes of infection—namely, through the transmission of the secretion of a primary or a secondary specific lesion, or of syphilitic blood from other sources, into the maternal organism.

1. *Inoculation of the mother by the diseased ovum.*

This theory, which has attained an undeserved recognition, seems first to have been promulgated by Gardien (1824). At that time it found among syphilographers a very fruitful soil, because then these specialists denied, for the most part, the inoculability of secondary syphilitic lesions; and it therefore was very acceptable to them to be able to attribute the inoculation to the fœtus instead of the husband, in whom, although the primary lesion was healed, and he was suffering merely from secondary syphilis, yet he nevertheless infected his wife.

For this reason we find this theory already fully accepted by Colles (*loc. cit.*). He observed secondary appearances in the mother during pregnancy, and even ulcera elevata upon the genitals. Notwithstanding, he did not consider the inoculation to have arisen in the usual way, but in the indirect manner, through the fœtus, attributing it entirely to the absence of the primary lesion in the man.

But it was first through Ricord, who gave it the high-sounding title of "Choc-en-retour," that this theory received such an extended recognition. He imagined the process to be simply a syphilitic inoculation of the mother by the fœtus, and believed that, after such an inoculation had occurred, the syphilis of the mother ran its usual course. In one case, even, where the child became ill, at the age of two weeks, with secondary symptoms, the mother presented like symptoms at exactly the same time. Yet he also always concedes that a woman could give birth to a syphilitic child without becoming diseased herself. More recently (1863) he even restricts himself in relation to this, by declaring such a transmission as "not impossible." But as he has nowhere, to my knowledge, placed upon record his definite observations relative to this mode of infection, we consequently withold entirely our criticism.

Diday (1854), in his work upon hereditary syphilis, accepted this view, without giving his own individual experience in relation thereto. On the contrary, he cites a single foreign case from Campbell (1844), which is as follows:

A man who had been syphilitic a long time before marriage, but presented no further conditions of a contagious character, begat with his wife, *who seemed entirely well*, four children: 1. An eight-months' miscarriage, the child living eleven days; 2. A seven-months' miscarriage, the child living one hour; 3. A six-months' miscarriage; 4. A healthy child was born at eight months, after a mercurial treatment of both parents.

Notwithstanding, however, that the observer himself regarded this woman as healthy, Diday nevertheless interprets the case in such a way that, from the pretended increase of the influence of the virus upon the

three first births, an augmenting infection of the mother by the fœtus may be inferred.

I have only cited this example in order to show upon what uncertain premises, and from what arbitrary deductions, theories are constructed.

Tyler Smith (1854) asserts that, if the placenta and membranes are so diseased that abortion results, the mother is very certain to become inoculated. If, on the contrary, the child is born apparently well, and only subsequently develops syphilis, the mother may, in such a case, escape infection. This entire bold theory is based upon two cases. Here, evidently, the connection of causes is entirely reversed. The mother is not infected if abortion ensues, but abortion takes place if the mother suffers from recent pronounced syphilis. If, however, the mother remains healthy, because the father is suffering from chronic syphilis, and presents no further inoculable lesions, the child has greater chances of being born living, or viable, and of becoming ill only some time after birth.

The theory of the retro-infection of the mother was very strikingly modified by Hutchinson, who, in a paper treating upon this subject, reported fifty cases in which the transmission of the disease from the fœtus to the mother occurred (while in seventeen cases the mother continued well, in spite of the syphilitic births). He, however, unlike previous observers, does not regard this transmissiou as a simple syphilitic inoculation, manifesting itself by a mere omision of the primary stage in the usual secondary, and finally also tertiary stages, but as *a gradual and slowly-developing syphilitic poisoning*, appearing frequently only very late, or at once with tertiary symptoms; or, again, only existing as a form of syphilitic cachexia. The women presented a pale, faded appearance; their flesh was flabby; they were asthenic, and had a tendency to pains in the extremities. In twelve women out of fifty, a falling out of the hair was observable shortly before and after confinement; eleven had ulcers upon the tongue; five, rhagades in the corners of the mouth; five had late eruptions, secondary in character; among them also condylomata, etc. All reports in relation to the disease of the father and of the children are, however, extremely deficient, or else completely wanting. Further, all data relating to the previous state of health of the mother did not in any case rest upon individual examination, but always upon the statement of these mothers themselves. The condition was also manifested, for the most part, only after *repeated* pregnancies; consequently the first examination of the women was made very late, whereby the real beginning of the disease was a matter impossible to determine.

Hutchinson believes, for this reason, that women first manifest tertiary symptoms, because these correspond to the condition of the father

at the time of the transmission of the syphilis to the child. But, having this opinion, he forgets that the hereditarily syphilitic child presents, without exception, the so-called secondary lesions also: macular and papular eruptions upon the skin, mucous membrane, etc.; that, again, if such a mode of infection is in general possible, the opportunity is constantly presented for the transmission of these symptoms also. He asserts, further, that the action of the virus is always rendered more intense through repeated pregnancies; placing himself thereby in direct opposition to the frequently-proven and generally-current view that a single, and to a certain extent instantaneous, effect of the syphilitic virus is sufficient to bring about the regular development of syphilitic processes, but that this development either makes any further increase of the syphilitic virus in the organism impossible, or seems, at least, to render the same completely ineffectual. Fnally, Hutchinson does not hesitate to deduce, as a result of this supposed concentration of the poisoning in the mother, an increased influence of the virus upon the children born later; and to assert that then, upon the birth of a succession of children slightly affected and capable of life, because inoculated by the father alone, there must follow suddenly a succession of abortions and premature births. This assertion, however, is diametrically opposed to the views of all writers who have expressed themselves in relation to the consecutiveness of syphilitic births, and to my own very varied experience, which, as will be apparent from the large number of successive births submitted later, there could be recognized in each instance a regular and constant diminution of the influence of parental syphilis upon the children, until, finally, entirely healthy children were born.

Rosen (1861–'62) simply accepts the views of Hutchinson, without supporting them by individual observations.

Balfour (1856), again, observes only the usual secondary symptoms in the mothers of syphilitic children. In the four cases reported by him, syphilis constantly manifested itself in secondary symptoms immediately after the beginning of pregnancy; in one case, the mother even had psoriasis in the sixth week. In two cases he found indurations upon the nymphæ at the commencement of pregnancy (!).

The correct interpretation of these cases very closely borders upon a simple inoculation, either shortly before or just at the time of conception.

De Meric (*loc. cit.*) admits, indeed, the possibility of such inoculation from the fœtus, but believes that it need not necessarily follow, because, in twenty-three cases of syphilitic births, the women remained perfectly healthy in thirteen cases, being syphilitic in but ten. Further, he acknowledges in these latter cases his inability to exclude entirely the direct inoculation of the mother from other sources.

Emile Vidal (1860) expresses himself similarly, as he found that, in the majority of cases, the mother remained healthy. In one case of Beyran's (1862) the mother suffered from the usual secondary lesions two months after confinement. In another of Maigrots' (1863), the same were manifested even in the second montn of pregnancy.

It is difficult to state positively the views of Zeissl upon this subject, as his different assertions are not entirely in accordance. Upon the one hand, he affirms: "It is of repeated daily occurrence that men suffering from secondary syphilis procreate syphilitic children without communicating the disease to their wives" (1858). Further: "By far the greater number of children born with syphilis, or who shortly afterward present symptoms of this disease, owe their inheritance to an inconsiderate father" (1875). Then he relates: "A child with a papular syphilide was the first-born of an entirely healthy woman, whose husband, before marriage, I had treated for syphilis" (1875). Again: "I saw such children [with coryza syphilitica] brought into the world, whose mothers showed no traces of syphilis" (1866). Upon the other hand, again, it is stated quite categorically, "that a mother who gives birth to a congenitally syphilitic child has always latent syphilis." But the mode of origin of the maternal syphilis is also not clearly to be understood from the statements of this writer; for in one place, when stating that a woman had given birth to two syphilitic children and then had psoriasis palmaris, he evidently considers her as being inoculated by the fœtus. We find stated, in another place, that the wives of men with latent syphilis, upon whom there could be found no initial lesions, after a very short time fall away noticeably in their nutrition, lose the hair of their head, suffer from periosteal nodes, etc.; consequently giving us to understand, evidently, that the inoculation occurs through the semen. According to this, these views do not admit of decision in either way.

Bryant (1872) believes in the transmission of syphilis through the agency of the fœtus; but his seven observations are also very far from being confirmatory, as they are all quite readily explainable through direct inoculation.

Frankel (*l. c.*), from whom we have already quoted, that in fourteen out of seventeen cases of hereditary syphilis he found the mother quite healthy, believes that in the remaining three cases the syphilis was transmitted from the fœtus to the mother.

In the second case, the mother, who had given birth to two stillborn, decomposed children, fell ill, four weeks after the birth of the third child, with ozæna. The absence of earlier symptoms is, however, not demonstrated.

In the seventh case, a primipara bore a decomposed child with osteo-chondritis epiphysaria, without other appearances. There followed, several days afterward, an eruption of flat condylomata upon one labium majorum. While, then, in the previous case, the fœtal syphilis manifested itself in the mother by tertiary lesions, it appeared in this case as local condylomata.

In the tenth case, which the author did not observe himself, he was informed by the attending physician that the condylomata were not of *long standing*. It is therefore supposed that they arose through retro-infection.

Yet Frankel acknowledges himself that the mother may be inoculated immediately at the time of a fructifying coitus, or soon thereafter, by a secondarily syphilitic man; thus giving at once his alleged cases of retro-infection their simpler and more comprehensible significance.

To our astonishment, Baumler (*l. c.*) also, in his excellent treatise upon syphilis, has accepted, with the Hutchinsonian modification, although only conditionally, this puzzling and as yet unproven mode of infection of the mother.

Accordingly, with the various writers, the supposed inoculation of the mother by the syphilitic fœtus takes place in two entirely different ways.

(*a*) The mother gives evidences of recent syphilis during pregnancy, or shortly after its termination. The mother, then, suffers from a pronounced syphilis at a time when the fœtus which infects her presents itself, no signs whatever of appreciable syphilis; and the fœtus, though furnishing the virus, occasions the complete development of the disease earlier in the mother than in itself. All these cases are much more readily explainable in this manner, viz., that the women were inoculated by their husbands without the primary lesion having been observed. Every trace of the primary lesion upon the mucous membrane of the female genital tract disappears often after several weeks; particularly is this the case with ulcers, whose more frequent situation is upon the collum uteri. (Fournier, 1873.) The circumstance that the man denies entirely the presence, on his part, of an external syphilitic lesion at the time of pregnancy, and afterward, where it is impossible to prove to him the contrary, is not to be relied upon; because, in a man positively syphilitic, the probability of such a lesion is always more than sufficient.

(*b*) The mother, after the birth previously of several syphilitic children, has tertiary syphilis, or suffers merely from a cachexia, without, it is supposed, her having had either the primary lesion or any secondary symptoms. In relation to this, there are two sources of error possible: the earlier symptoms are either very insignificant and are forgotten, pos-

sibly also purposely denied, or the supposed syphilitic cachexia has nothing whatever to do with syphilis. I have frequently noticed that women, after the repeated births of syphilitic children, became anæmic, emaciated, etc. I have also observed quite the same appearances, in connection every time with loss of hair, in the mothers of non-syphilitic children shortly after labor. Here, as in the other cases, I have found ample explanation for these conditions, in the various puerperal diseases closely following upon each other, accompanied by severe hæmorrhage in combination with bad hygiene and surroundings.

The only really noteworthy objection to the complete immunity of the mother of a fœtus afflicted with hereditary syphilis is, that if, after the birth of such a child, the mother nurses it, she is not inoculated, even although it suffers from pronounced syphilis. Colles (*l. c.*) was the first who called attention to this circumstance, which was soon confirmed by Egan (1846) and others; since then, also, this opinion in relation to this particular immunity has become a general one. It has remained, however, by no means uncontradicted. Cazenave (1847), for instance, relates that a woman gave birth to a child with specific lesions, whose father had acknowledged syphilis, and acquired, in suckling the child, ulcers upon the nipple, followed by a general exanthema. Similar cases are also reported by Brizio Cocchi (1858) and Muller (1861); but they are not described with sufficieut distinctness. I myself have never been able to prove an inoculation of a mother by her congenitally syphilitic child from nursing it. In one case of undoubted inoculation at the breast, the syphilis of the child could not to a certainty be decided upon — whether congenital or acquired. Such an inoculation is, at all events, exceedingly rare, even if it ever occurs. This is certainly a very important question, which deserves to be carefully studied and clearly stated. It is really the duty of those who consider every mother of a congenitally syphilitic child as having latent syphilis, to prove the correctness of their opinion through direct experiments by auto-inoculation, even if no symptoms whatever of the disease are present. We can *a priori* by no means infer, from the fact that the mothers of the hereditarily syphilitic children, as a rule, are not inoculated by them at the breast, that all the mothers of such children are syphilitic; and if, by repeated direct examinations, and also from other circumstances, the absence of every specific symptom is confirmed, and syphilis thereby entirely excluded, such an individual must be regarded as non-syphilitic, whether she is afterward inoculated by her child at the breast or not.

2. *Inoculation of the mother by a syphilitic spermatozoa at the time of conception.*

This mode of inoculation is accepted only by Baerensprung (1864), who seems also to have fabricated it, and upon his authority by Geigel (1867) also. Baerensprung denies the retro-infection of the mother by the diseased fœtus; but only for the reason that he observes that women, if they are impregnated by syphilitic men, present, ten weeks thereafter, fresh secondary lesions, which, however, are not induced by a primary inoculation, but through conception. "The semen of a syphilitic man, which, under ordinary circumstances, is inocuous to a woman, inoculates her as soon as it impregnates her." The cases which are given to prove this somewhat mysterious-sounding declaration are, however, entirely and wholly insufficient.

A man is treated for secondary syphilis; presents still, in September, erosions in the mouth, which are finally healed. He is not seen until the following March, when he relates that, having in the meantime married, his wife became pregnant in January, and has now condylomata upon the genitals, which developed from erosions in the same locality. This would, however, seem to show, evidently, an ordinary inoculation of the woman upon the genitals. (Case XIX.)

Neither do the remaining cases answer to the most modest demands regarding the plausibility of the theory assigned to them. In one instance, the supposition of the latency of the paternal syphilis rests solely and alone upon the deposition of the father himself; in another instance, slight relapses, erosions in the mouth, also during marriage, are acknowledged. Equally uncertain is the absence of the primary lesion on the part of the woman; because, in all cases, this point is investigated for the first time after there are pronounced syphilis and recent condylomata. Consequently he who will not attribute to these cases that which does not belong to them, will judge them simply in such a way as to regard the woman as being inoculated by her husband—affected with syphilis—at about the time of conception, and that she subsequently suffers in the usual way from general syphilis.

It is still to be remarked, that, although Baerensprung denies from the beginning the birth of a syphilitic child from a healthy mother, because he cannot imagine a conception without inoculation, according to his own peculiar view, nevertheless in several of his cases (XXXIV., XXXVIII . XL.), he acknowledges distinctly the immunity of the mother of an hereditary syphilitic child.

3. *Inoculation by the semen of a man with latent syphilis.*

The discussion of this point should not really form a portion of this treatise, as it is one which is only concerned with the question of heredity. It is certainly a matter of indifference to the question of heredity in what manner an inoculation of the woman from external sources takes place—

whether in the generally accepted manner, through the absorption of the virus from an excoriation upon the skin or mucous membrane, or, again, in the very vague or uncertain mode, through the contact of the semen of a syphilitic man with the vaginal mucous membrane.

Only, therefore, for the sake of completeness, will we mention that this mode of inoculation, as first proposed by Egan (1851), and afterward accepted also by Behrend (1860) and Knoblauch (1861), is, according to the observations of these writers, by no means proven; that all cases allow themselves to be more simply and naturally explained by an inoculation taking place in the usual manner, and only intentionally or unintentionally suppressed; that such a mysterious event gains not the slightest degree of probability by the hypothesis of Behrend: "that, in an act of life as powerful and exciting as that of coition, such a transmission is very easily possible;" and that finally—which seems to be the principle thing—this hypothesis is brought completely into ridicule by the numerous confirmations of the entire and continued immunity of the mother of several syphilitic children (as is even reported to be the case by Behrend himself).

All suppositions of a subsequent inoculation of the mother by the fœtus are, therefore, completely untenable. According to our experience, there are only two occurrences possible: either the mother of a syphilitic fœtus is inoculated from external sources previous to or at the time of conception, or else during the period of pregnancy, and in consequence of this inoculation suffers from syphilis, which develops and runs its course in the usual manner; or the mother is not affected through external sources, and, as a consequence, remains always free from disease, in spite of the fact that she has given birth to one or more children inheriting syphilis from the father. These mothers, then, differ in no way from healthy women. They are well-nourished, strong, and hearty; further, they give evidence of their immunity from every form of specific disease, from the fact that they have borne a succession of children in whom is perceptible a continued and uninterrupted decrease of the syphilitic poisoning. This last would not have been possible if a syphilitic inoculation of the mother had taken place during the period of first pregnancy. This recent infection, from all experience, makes itself known, at first decidedly, by the birth of intensely-diseased children, such as premature and still-births; and only the spontaneous, gradual decrease of the recent maternal syphilis can again render possible, after the lapse of many years the birth of a viable, because more slightly affected, child. But such an interruption in the succession of births can never be observed. The decrease in all the cases which we have already communicated, and in the larger number of those which are to follow, is much more, rather, a continual one. The mother, consequently, remains free from syphilis.

The summary of our discussions so far is, accordingly, comprehended in the following:

A woman impregnated by a syphilitic man bears syphilitic children, but remains herself free from the disease, if she be not inoculated from other or external sources.

The syphilitic virus does not pass from the fœtus to the mother through the partition-wall, or septum of the fœtal and maternal vascular system.

V. *Can the Mother, acquiring Syphilis during the Period of her Pregnancy, transmit the Disease to a Fœtus, healthy at the Time of Fecundation?*—This mode of the transmission of syphilis is accepted by the majority of authors, but almost exclusively for the reason that they regard it simply as being self-evident and well-known. The one always refers to the other, and only exceptionally does any one consider it worth the trouble to produce his individual exact observations relative to this assertion, to which, usually, no great importance is attached.

But just this question is one of exceeding importance, for upon the answer depends the definite decision as to whether the inheritance of syphilis takes place only at the time of conception, or whether it may also be communicated through the placental circulation. Consequently, I have given my special attention to this question from the very beginning, and have taken the trouble to subject to a close investigation all positive observations reported upon the subject. The result, however, is not at all favorable to this mode of transmission from the mother to the child.

It is above all very surprising, that even those writers who consider such a transmission as possible do not recognize its occurrence in all cases. Such a transmission is really only conceivable in this way: that the syphilitic virus contained in the blood of the mother, is conveyed through the placental circulation into the vascular system of the child, and there again creates syphilis. We should therefore suppose that every pregnant woman, who suffers from recent syphilis during any period of her pregnancy, would also inoculate the fœtus; for, during this period, we must necessarily consider her entire blood-mass to be saturated with the syphilitic virus. But we find, now, that all writers, with but few exceptions, believe this transmission to take place only during certain months of pregnancy, and in the remaining months the child is exempt; in which opinion, as we shall see later, they do not at all harmonize with each other in the determination of these different periods. Thence follows, undoubtedly, but one fact, viz., that almost all these authors have seen mothers who have suffered from recent syphilis, acquired during the period of pregnancy, give birth also to healthy children. As we shall prove from many individual and foreign observations, the last case is placed beyond a doubt; and

there being no possibility of error in regard to this, for the reason that the two factors necessary for proof—namely, the recent syphilis of the mother and the immunity of the child—are in general quite readily shown, a doubt, therefore, as to the correctness of the other observations obtrudes itself at once, in which a fœtus, healthy from the time of conception, should during its intra-uterine development acquire syphilis from its mother, who since that time had become diseased.

Exactly in these cases the greatest scope is given for error and deception. That the theory of such a transmission to the originally healthy fœtus may be rendered valuable in a scientific way, the following three conditions are indispensible;

1. The health of the father at the time of the fecundation must be proven.

2. The health of the mother at the time of conception must be established, consequently the time of her inoculation exactly determined upon. This last is only possible when either the primary lesion itself, during the course of pregnancy, or at least the first outbreak of constitutional symptoms, has been seen by the observer.

3. The syphilis of the child must be proven by unequivocal symptoms. A premature birth, intra-uterine death, great debility at the time of birth, an early death without a previous outbreak of syphilitic symptoms, are by no means sufficient for considering the fœtus to be syphilitic.

If but a single one of these conditions is wanting, the case is not to be relied upon. If even the infection of the mother after conception is proven, and the child is undoubtedly congenitally syphilitic, the history of the father being unknown, it is very natural to suppose an inheritance from a syphilitic father at the time of fecundation; to whom also, very probably, the subsequent inoculation of the mother must be attributed. Or, if a woman suffering from constitutional syphilis comes under observation for the first time at the end of pregnancy, or even only after confinement and asserts then that she became ill in the third or fourth month of pregnancy, it proves in no way her immunity at the time of conception. It is well known, apart from willful deception, how often women overlook the primary lesion, or even the eruption of roseola syphilitica, and only date the period of the disease from the time when the condylomatous growth of papules in the vicinity of the genitals began to be a source of serious annoyance. Here it must also be stated, that in cases of the last category the father is almost always unknown. If, finally, a woman with recent syphilis, originating, according to her statement, during pregnancy, aborts prematurely, or bears a still-born child, in which, even upon the closest examination, no signs of syphilis are perceptible; or if,

again, she gives birth to a weak but living premature child which presents no evidence of syphilitic disease either during its life or after death, we may, in such a case, say that the freshly developing or the florid general syphilis of the mother was the cause of the abortion, the premature birth, and the intra-uterine death of the fœtus; that here the maternal syphilis acted like other deeply-seated disease processes in the mother, such as typhus, cholera, or, indeed, even lighter diseases, preceded by eruptive fevers. But from all this alone, if the disease is not positively proven in the fœtus, we can by no means come to any decision relative to a transmission of the syphilis to the child.

If, with these restrictions, we now proceed to prove those cases which claim to show the transmision of syphilis from the mother to the fœtus healthy at the time of conception, we find that, in all the varied and extensive literature upon syphilis and inherited syphilis, there is not a single well-proven case, or, indeed an isolated one, which according to these conditions is even probable. I find that no case in which a child, both of whose parents were healthy at the time of conception, had itself inherited syphilis in general, or even a disease with the characteristic appearances of hereditary syphilis, merely in consequence of the disease having been acquired by its mother during pregnancy.

Nevertheless we must undertake the ungrateful task, at least in part, of placing in review the many contradictory opinions and observations of writers.

As we have learned in the introduction, after Augier Ferrierus in the sixteenth century, and Astruc in the eighteenth, had already spoken of the inoculation of a fœtus by the diseased secretions of the mother, as opposed to that of heredity through the semen, we find the first more definately expressed views upon this mode of transmission by Mahon (*l. c.*) who asserts that only children born prematurely, with shrivelled skin and dry, scaly epidermis, denote inoculation at the time of fecundation; while those poisoned by the secretions of a mother diseased during pregnancy only present the first signs of syphilis after birth. The incorrectness of this view is at once apparent; for, according to this, always only the first child could be affected in the last-mentioned manner, and those born later must always be premature; while, as is well known, the reverse condition forms the rule.

The following cases are given by Bertin (*l. c.*):

A woman noticed, during the middle of her pregnancy, nodular growths about the genitals. In the sixth month (consequently, four to six weeks after the appearance of these growths) the birth of a still-born child took place. Here the condition of the father is unknown, the syphilis of the child not proven.

Three and a half months after conception a woman had a chancre, and ulcers upon the tonsils. The child, three weeks after birth, showed ulcers *ad nates*.

Again, the condition of the father is unknown; the infection of the mother is to be dated earlier, because already in the fourth month she had presented marked symptoms of general syphilis.

In the sixth week of pregnancy a woman had pustules upon the labia majora, and aborted at four and a half months. Here also the father is unknown, the syphilis of the fœtus unproven.

Starck (1851) relates the following, as a case of inoculation of the fœtus during pregnancy:

In a girl four months pregnant he himself observed a primary ulcer, which was healed in the seventh month. A child was born at term, with symptoms of hereditary syphilis.

Here, upon the one hand, everything in relation to the father is wanting, and, upon the other, nothing whatever is said of general syphilis in the mother. The disease was probably inherited from the father, while the mother suffered simply from a chancroidal ulcer.

Diday (*l. c.*) regards this infection of the fœtus from a subsequent diseased mother to be so certain, that he intentionally omits the publication of cases bearing upon the question. He constructs the following theory in relation to the time when syphilis can be communicated to the fœtus: Syphilis acquired during the first forty days of pregnancy is not transmitted to the fœtus, because at this time the ovum still nourishes itself independently (?).* During the last months of pregnancy the fetus becomes again more independent, and the child therefore remains likewise spared, if during this indefinite period the maternal diathesis is first developed. Only syphilis appearing in the mother during the middle months of pregnancy is transmitted to the child. In addition to this, he remarks decidedly that syphilis communicated to the child in this manner can be distinguished in no way from that inherited from the father. The worthlessness of such theories, having no foundation whatever, is at once apparent.

Rosen (*l. c.*) likewise succeeded in constructing equally untenable theories in regard to the influence upon the fetus of syphilis acquired by the mother during pregnancy. He holds the fœtus as not yet susceptible to the virus within the first three months. In the third to the fourth month, when the vascular interchange is already active, the fœtus is still to weak, on account of which it is thrown off as an abortion, dead but not syphilitic. Only a fœtus in the second half of pregnancy, when

* Does the mother after this time again cease to be syphilitic.

fully capable of life, is infected by the mother. His observations are about as follows:

Several months *before* conception the mother had a chancre; within the first months of pregnancy secondary syphilis; at the ninth month, the birth of a syphilitic child. (Case LXII.) The father was evidently syphilitic, the mother also, probably, at the time of conception.

Neither in the remaining cases, apart from the want of information in regard to the father, is syphilis proven in the fœtus; they are, it is true, born dead, but present no specific lesions.

Oewre (*l. c.*), who in a consistent manner acknowledges this mode of infection (quite like Cullerier) throughout the whole period of pregnancy, brings herewith an extensive material under observation. But this material does not in any way meet our demands. Of his forty-three cases—which are, however, almost exclusively not founded upon his own observations, but are taken from old histories of diseases—not one is in such a condition as to prove anything whatever. In thirty-one cases, absolutely every statement in regard to the father is wanting; and in five cases he says positively that the father, at the time of the procreation of the child, was constitutionally syphilitic. In all the cases it is only shown, as regards the mother, that at the time of her confinement she was suffering from syphilis (in three cases even only with the primary lesion), but only in thirteen cases is it asserted that the inoculation really took place during pregnancy, since the primary lesion, or the outbreak of the first general symptoms, were then observed. In the great majority of cases the women were admitted only shortly before labor, in several cases even afterward—indeed, several months later—and their statement that they became ill in such and such a month of pregnancy was simply made a note of. These data, therefore, are entirely unreliable. It is not much better in relation to the hereditary syphilis of the children. Only seventeen of the forty-three had really presented symptoms of syphilis; six fœtuses were born dead and decomposed, and were not dissected; twice a premature abortion resulted. All the remaining children lived for hours, days and weeks—some, indeed, for two and a half months—without suffering from syphilis, and died with various diseases in no way connected with it. In several, the autopsy revealed the absence of every specific lesion. These cases of Oewre's run about as follows:

The mother was inoculated in the beginning of the second half of pregnancy. In the ninth month a child was born, which died in twenty days. The *post mortem* revealed catarrhal pneumonia and pulmonary atelectasis. (Case LII.)

The primary lesion in the mother was noticed in the eighth month, the outbreak of general symptoms before labor; the birth of an apparently healthy boy, weighing five and five-eighths pounds, who fell ill when ten days old with vomiting and diarrhœa, and died when two weeks old. An autopsy showed general atrophy, atelectasis, and hæmorrhagic infarctions in the lungs and kidneys. (Case LIX.)

The mother, admitted when seven months pregnant, inoculated two months previously. A healthy child was born, which died when one month old, with vomiting and convulsions. (Case LX.)

In the ninth month the mother gave evidence of recent secondary syphilis. A mature child was born, weighing ten pounds, which died atrophied when eight weeks old. (Case LXIII.)

These are the most prominent of the twenty-eight cases, in all of which the syphilis of the children is entirely unproven. Why Oewre mentions them as supporting his view, is not clear. They only confirm the fact, in our estimation, that women positively suffering from recent syphilis acquired during pregnancy give birth to non-syphilitic children.

Finally, Lewin (1873) relates that a girl, who was impregnated by her *fiance*, first observed a "pock" in the seventh month on the under lip, which left an induration. A premature birth resulted, and the fetus showed gummy orchitis, spots and ulcers upon the skin. Lewin concludes, from this case, "that children whose mothers are inoculated during the last months of pregnancy may inherit the disease." But in this case at least six to eight weeks must have elapsed between the appearance of the primary lesion in the mother and the birth of the child; and as the fetus gave evidence of already developed gummata, the fetal syphilis must have developed, as a consequence, earlier than the general symptoms in the mother. She stated, further, that her intended had suffered from sore lips a long time previous to her own inoculation; and it is scarcely to be doubted that in this case the syphilis of the father existed already at the time of conception, and was transmitted to the fetus.

The result of our critical study of the observations published by authors, and founded upon fact, is, then, to the effect that the transmission of syphilis from the mother to the child during pregnancy is not proven in any single case. Much more rather we have as evidence, as well from our own experience as also from the numerous reports of other writers, the fact that, in all those cases in which the health of *both* parents at the time of conception is undoubted, there is born every time either a living non-syphilitic child, or, if the pregnancy is interrupted by the outbreak of general syphilis in the mother, there results an abortion or a premature birth, in which the objective condition presented is

a negative one, and therefore we are not entitled to suppose the existence of an inherited syphilis.

CASE XI. *Mother inoculated in the Second Month of Pregnancy; Birth of a healthy Child; Subsequent Children syphilitic.*—The father aged at present thirty-one, and the mother forty-one years, have been married since 1866.

1. 1867.—A boy, always healthy, now nine years old. In 1868, at the beginning of his wife's second pregnancy, the man contracted an ulcer upon the penis, inoculating his wife immediately toward the end of the second month, so that in the fourth month the genitals were covered with flat condylomata, and ulcers had appeared in the throat. The man also, at this time, had a general exanthema, and suffered from persistent enlargement of the inguinal glands. The attending physician, who subsequently confirmed fully the communications made to me by the pair, treated the man with pills of corros. sublimat., the woman only locally. At the end of the usual period of pregnancy she gave birth.

2. 1869. —To a healthy boy at term, who at first throve very well upon exclusively artificial diet. When four months old he suffered from dyspepsia, and died at five months, without having presented any signs whatever of a sypnilitic disease.

3. 1870 —A still-born female child at eight months.

4. 1873.—In the middle of the ninth month a boy, still-born.

5. *September*, 1874.—A living boy at term. During the first days of life there was tumefaction of the nasal mucous membrane; at the end of the third week a pronounced maculo-papular exanthema, diffuse syphilitic infiltration of the skin of the face, the palms of the hands, and the soles of the feet. Several days afterward there set in a painful swelling about the epiphyseal connection of the heads of the humerus of both sides, and also of the epiphyses of the left lower arm, occasioning a form of lameness of both upper extremities. In consequence of the continued treatment with protiodide of mercury, all the symptoms disappeared, relapsing frequently.

This case leaves nothing to be desired as to clearness. The first child is healthy. At the procreation of the second child both parents are still healthy, but shortly afterward they both contract syphilis, and the outbreak of general symptoms in the pregnant mother takes place in the fourth month. Nevertheless, the fetus remains free from the disease, for the reason that it originates from a non-syphilitic semen and ovum. The children born later, because procreated by syphilitic parents, are, without exception, diseased, the intensity of the disease becoming gradually more subdued.

In following up the fate of the children born of syphilitic mothers in the lying-in hospital of this city, and further still, in the foundling asylum, I succeeded likewise, in a large number of cases, in proving the immunity of the children whose mothers were suffering from recent syphilis. I must remark, in connection with this, that the birth of a healthy child from a mother with recent syphilis, making its appearance during the last months, is an event of remarkably frequent occurrence. Unfortunately, the mortality among foundlings in general, and especially among the children just mentioned, within the first weeks of life, is very large; more particularly in consequence of the existing regulation, that all children whose mothers suffer from syphilis are not given to them to nurse, but are removed immediately to the foundling asylum, and kept under observation. Of thirty-seven living children, born for the most part at term, whose mothers at the time of labor were suffering from quite recent forms of syphilis, and, in accordance with the unanimity of the conditions found, with the history, were with the greatest probability inoculated during pregnancy, twelve died in two weeks, seven in four weeks, six in the course of the second month, and three in the third—all of whom presented no signs whatever of syphilis, but died, for the most part, from symptoms of intestinal catarrh and dyspepsia. Seven of these children, after having been under observation for three months in the foundling asylum, were put out to board, entirely healthy, or else restored to their mothers.

When we see, as we shall later, that in the viable children with hereditary syphilis observed by us, the complete outbreak of the exanthema (apart from the prodromic appearances, coryza, etc., usually already present) occurs in 53 per cent. of all the cases in the first month, in 32 per cent. in the second, and only in 15 per cent. in the third, and that we have never observed the first outbreak after the lapse of the third month, it must be admitted that not only the seven children who remained healthy are to be regarded as non-syphilitic, but also at least the large majority of those who died in the second and third months. In most of these last cases, also, the negative condition found upon *post mortem* deserves to be taken into consideration. Several of these cases are given here briefly:

Therese S., Born February 12, 1875, weight five and a half pounds. The mother, according to her own statement, had lesions upon the genitals in August, 1874, when three months pregnant, and in October had a macular eruption over the whole body. Immediately after labor she suffered from a general papular syphilide, which in June, 1875, was almost healed. The child was under observation in the foundling asylum until May 15th, and dismissed entirely healthy at the age of three months.

Franz W., born December 11, 1874, weight five and three-quarter pounds. The mother, several days after confinement, having been admitted to the department of Prof. von Sigmund, had confluent papules upon the genitals, which, according to her statement, made their first appearance three months before labor. This would seem to indicate an infection about the middle of pregnancy. The child remained for three months in the asylum, without evidences of syphilis and was then given out to nurse.

Elizabeth Z., born April 2, 1875, weight six pounds. One year and a half previously her mother had given birth to a healthy child. Three weeks before confinement she was received into the division of Prof. Zeissl, presenting recent papules. The inoculation, as stated by her, dated eight to ten weeks back, this corresponding to the condition presented, consequently taking place at the middle of the sixth month of pregnancy. The child, upon its admission to the foundling asylum, and still later, was in a normal condition, and after four weeks was returned to its mother. It has since remained entirely healthy.

Magdalene H., born February 18, 1875, weight five and a quarter pounds. Shortly after confinement the mother was admitted to the division of Prof. von Sigmund, with papules upon the genitals, and upon the roof of the mouth; also defluvium capillorum She dated her inoculation from the fifth month of pregnancy, and the outbreak of the eruption from the seventh. The child lived for six weeks, and died in the asylum from intestinal catarrh. No suspicious symptoms whatever could be discovered, either during life or at the carefully made *post-mortem* examination.

These observations of mine are confirmed in a very acceptable manner by numerous reports founded upon facts, and cases objectively described by other writers, even by those who hold this mode of transmission as possible.

Bertin (*l. c.*), who had charge of the Hospital Vaugirard, an institution set apart exclusively for syphilitic pregnant women, had already reported that always a certain number of mothers, suffering at the time of labor from severe recent forms of syphilis, gave birth to children who were healthy and continued so.

From the reports of Pick (1873), who followed up the histories of the children of sixty-one syphilitic mothers, it is evident that an inoculation of the mother during pregnancy always has, as a result, either a premature birth, or the birth of a dead child presenting no signs of syphilis, or that a living non-syphilitic child is born. Cases of the last category —ten in number—are quoted, in all of which the mothers were inoculated at all periods of pregnancy, and the children, after being under observation for three months in the foundling asylum, were discharged healthy.

In one case, the child was born prematurely in the seventh month (the mother suffered from papules and periostitis), but remained healthy. The fact of the premature birth furnishes proof that, in this case, not the condition of the child, but the disease of the mother, was the cause of it.

A very instructive case, quite analogous to mine above given (XI.), is reported by Hennig (1861):

A man inoculates his wife in the middle of her first pregnancy, while he himself is being treated for chancres. At the time of labor the syphilide of the wife is still perceptible. The child is born healthy, and remains so in spite of being suckled by a syphilitic mother. In the next pregnancy, notwithstanding a mercurial treatment, she aborts in the fourth month; the next time in the seventh. The fourth child is born at term, but dies when three months old with symptoms of syphilis. The fifth child is also syphilitic, but is cured with the protiodide. Finally a sixth and seventh child are born, perfectly healthy.

Here all conditions are fulfilled: the health of both parents at the time of fecundation, and the beginning of maternal syphilis during pregnancy proven, nevertheless the child remains healthy.

Similar isolated cases are reported by Kobner (*l. c.*), Spath and Schaunstein (1859), and Bidencap (*l. c.*).

Baerensprung asserts positively that he has never seen a child with hereditary syphilis born of a woman inoculated with the disease during pregnancy, and gives, in the most circumstantial manner possible, fourteen cases (LXXVII. to XC.), in which the inoculation took place four times in the first half of pregnancy and ten times in the second. The mothers had at confinement, every time, general syphilis, and still gave birth exclusively to healthy children. They were all vigorous at birth, some among them weighing even six and a half to eight pounds. One died when three weeks old from intestinal catarrh, and at the autopsy showed no evidences of a specific affection. The remainder were under observation up to the time of their dimissal, in the seventh, thirteenth, and sixteenth weeks, etc , and continued healthy. Baerensprung adds, that he could have increased the number of these cases considerably, as they are of very frequent occurrence.

Ritter von Rittershain (1870) also relates, that of seventeen children whose mothers were affected at confinement with recent syphilis (flat condylomata), eight died shortly after birth, and nine were dismissed from the foundling asylum. On none of these were there any traces whatever of syphilis.

In accordance with this, it follows that, in all well-proven cases in which the child is procreated by healthy parents, but the mothers become

syphilitic during pregnancy, the disease is not transmitted to the child. All contrary observations and assertions have proven themselves to be unreliable and incorrect. The causes of the inaccuracy are to be sought for chiefly in the following points:

1. The condition of the father is, as a rule, not examined into. Therefore it happens that even those writers who regard this mode of transmission as possible must acknowledge, for the most part, that it fails if the mother is inoculated during the last three months. In these last cases, the individual inoculating the mother and the father of the child are either two different persons, or, if they are identical, it is at least probable that the father only contracted the inoculating lesion after the conception of the child, so that, at the time of fecundation, both parents were still healthy. The nearer the time of the inoculation approaches the date of conception, the more unreliable become all statements, and so much greater the probability that the inoculating man and the father of the child are one and the same person. Consequently, if the mother at the time of conception was not yet syphilitic, still at least the father, who inoculated her, had already furnished diseased semen for the fructification of the healthy ovum. We have, therefore, also conversely the right to regard as established, inheritance from the father, in those few cases in which the inoculation of the mother *after* conception is undoubted, and notwithstanding a child is born with unmistakable hereditary syphilis.

2. The unreliability of the statements in regard to the beginning of maternal syphilis. Here also is an explanation for the fact why, nominally, transmission does not take place in the last months of pregnancy. If the inoculation occurred positively only in the last months, so, at the time of labor, in which usually the mothers come for the first time under observation, the proof of the period of the inoculation is with a certain degree of probability possible. The further back this period dates, the more opportunity is given for error, and the easier are the condylomata lata (which are the evidences of general syphilis, existing perhaps for months, making their appearance in the beginning of pregnancy, and favored greatly, as is well-known, by the progressing pregnancy) confounded with the unobserved primary lesion; and, therefore, the commencement of the disease is transferred erroneously to the period of pregnancy, while already at the time of conception the syphilis of the mother (perhaps even together with that of the father) was developed.

3. The simple fact that in the first months of pregnancy an abortion occurs, that the child dies intra uterum and is still-born, or that it is at all events born prematurely, is regarded as evidence of the inheritance of syphilis, even when there is not the slightest proof of a syphilitic affection of the fœtus. In fact, such an event is by no means infrequent. If the

mother is inoculated at the time of, or shortly after, conception, or in the very first months of pregnancy, abortion often results within the next few weeks. In the same manner, a premature birth follows if the mother is inoculated in the later months, and if the eruption of general symptoms takes place before the end of pregnancy, and either a living and non syphilitic child is brought into the world (as in the above-mentioned case of Pick's), or a macerated fœtus is born, upon which no specific lesions are perceptible, as in the following case:

Caroline M. was delivered, July 8, 1875, in the third lying-in division, of a macerated male fœtus, aged six and a half months, eight days having elapsed since she had felt any motions of the child. Several days previously she had been admitted into the division of Prof. von Sigmund, suffering from papules upon the genitals and a recent macular eruption, which existed in all fourteen days before labor. Upon examination, the fœtus presented nothing characteristic of syphilis; the internal organs, liver, lungs, thymus, etc., were entirely normal, as also all carefully-examined epiphyseal connections of the long bones. Nothing noteworthy about the placenta.

In these and similar cases the outbreak of general syphilis, which, as is well known, is accompanied in most cases with fever, operates apparently in a quite analogous manner to other febrile affections of the mother, which excite so frequently either premature uterine contractions, with abortion and miscarriage, or cause the death of the fœtus, and result in its expulsion only after a longer or shorter time. These occurrences, however, have nothing whatever in common with a transmission of syphilis to the fœtus.

We arrive, after all this, at the conclusion that *a child, both of whose parents at the time of procreation were non-syphilitic, does not become syphilitic even if at any time during pregnancy the mother contracts the disease. This latter may disturb the normal course of pregnancy, and interrupt it prematurely, but is never transmitted to the fœtus.*

The syphilitic virus does not pass from the mother to the fœtus through the partition wall or septum of the maternal and fœtal vascular systems.

This complete exclusion of the placental infection of the fœtus, arrived at through clinical experience, renders it possible for us to explain several occurrences—more rare, but nevertheless worthy of consideration—which otherwise would remain entirely unintelligible. These are those cases of twin births, in which, especially in regard to the inheritance of syphilis, important differences in both children are noticeable—either the one appears severely affected, the other in a modified form, or only the one is affected, the other is and remains entirely healthy.

Such cases have been observed by the following authors:

Campbell (1844): A syphilitic woman gave birth to twins, one of which was entirely deformed, while the other, apparently strong and healthy at birth, presented, after several weeks, signs of hereditary syphilis. Price (of Margate) observed that a woman, who had been inoculated by a child at the breast, gave birth after some time to twins, of which one was still-born, the other affected with hereditary syphilis. Clemens (1853): Both parents syphilitic. After the birth previously of a macerated fœtus, twins were born, of which one was apparently healthy, but died after three weeks, while the other was still-born, and almost putrid. Of late a similar case has been reported by Caspary (1875). Here the mother alone is syphilitic. The birth of a decidedly syphilitic child is followed by one at term, macerated; finally, in the third pregnancy twins are born, of which one—a boy—is strong and healthy at birth, and only after four and a half months is affected with an exanthema; while the girl is born feeble, cries a great deal, has a pale, waxy complexion, a wrinkled face, and after a few days has a general syphilitic eruption.

Puzin (1862) saw at one time twins, one suffering from syphilis while the other remained healthy. Luzinsky (1859) found, with twins, one intensely syphilitic, the other merely anæmic, but without symptoms of syphilis. Hutchinson (1867) saw one twin with exceedingly well-marked syphilis, the other healthy.

If, now, the transmission of syphilis from the mother to the child takes place exclusively, or even if only generally, through the placental circulation, it would be incomprehensible (because we must recollect that this transmission can take place during the whole period, or at least through several months of pregnancy) how two beings, subjected to exactly the same conditions in relation to the effect or action of the component parts of the maternal blood-mass, could the one be severely affected, the other in a subdued degree. It is still less conceivable that the one becomes syphilitic, while the other remains entirely free from the disease. On the contrary, it appears entirely conceivable, and, through many analogies, quite plausible, that, of two cells of procreation (whether maternal or paternal) furnished simultaneously, the one contains the syphilitic virus in a larger, the other in a smaller, amount or intensity, or a third not at all. Also that these parental qualities, like all others, repeat themselves in one child to a greater degree than in the other, and perhaps in a third are entirely wanting.

The same explanation is required by those cases in which, during the period of a noticeably modified power of transmission on the part

of the mother, a healthy child is born between two viable children moderately affected with syphilis.

CASE XII. *Chronic Syphilis of the Mother; a Healthy Child between Two Living Syphilitic Ones.*—A tailor, aged thirty-five, marries, in Jan., 1864, a cook, aged thirty-two, suffering evidently, at the time of marriage, with chronic syphilis. She is very pale, suffers constantly with nocturnal headache, and acknowledges to have had for several years an eruption on the palms of the hands. The husband is vigorous, and very probably has been always healthy.

1. 1865.—Boy, in the fifth month, still-born.

2. 1866.—Boy, in the sixth month, still-born.

3. 1868.—Female child, at term, lived for half an hour.

4. 1869.—Boy; had an eruption soon after birth, suffered from persistent catarrh, and died, when four years old, from a pulmonary affection.

5. 1871.—A girl; at birth, and later, always healthy. At an examination when three and a half years old showed not the slightest trace of a previously existing syphilis.

6. 1874.—A girl, born at term; suffers in four weeks from coryza and a maculo-papular exanthema. She is, however, well nourished, weighing, at two months, 4,700 grammes. The specific cachexia is very slightly marked, and a complete cure takes place after a short treatment with the protiodide.

This case also is only explainable by an exclusively ovular transmission of the disease: for we may very readily accept the view that, in a condition in which we must consider the virus as being divided only into the minutest particles in the maternal organism, at one time such an ovum is fructified, which is not imbued whatever with the virus, while at another time, even at the next conception, an ovum very slightly infected is fructified. On the contrary, it is scarcely imaginable that a positively syphilitic woman, during the whole nine months of pregnancy, should not even once transmit the virus to the fœtus through the interchange of secretions, if such a transmission is in general possible.

(*To be continued.*)

DEFORMITY OF THE HAND AS A SYMPTOM.

By R. W. Amidon, M. D., New York.

It was when studying the bewildering array of chronic invalids under Prof. Charcot's care at the Salpetriere that the following article was conceived and the material for its composition, in great part, collected. Not long after, the writer met with the excellent thesis of Meillet,* which has been of inestimable value as the only book of reference on the same subject.

An article on this subject may well be preceded by a few words on the normal position and appearance of the hand. The normal position of the hand depends on two important factors; first, the extreme mobility with the force of gravity, and, secondly, the resultant of the tonicity of antagonistic muscles. Each group of muscles moving the hand and fingers has its direct antagonist in some other group. Thus, flexors antagonize extensors; pronators antagonize supinators, and abductors antagonize adductors. Living, healthy muscle always has a certain tonus, which, together with the tonus of its antagonist, keeps the part moved by these muscles steady and ready at the shortest notice to obey the impulse of the will or of reflex excitation.

The best example of this is the head, which, during waking hours, is balanced by the conjoint action of the neck muscles, but the moment the muscles lose their tonicity at the onset of sleep the equilibrium is destroyed and the head obeys the laws of gravity and nods. As in the neck, so in the hand the muscles keep it in a certain attitude.

The usual attitude of the human hand at rest is that of pronation and slight flexion of the wrist and semi-flexion of the fingers, while the thumb is dependent and slightly inverted, so as to make its palmar aspect face very nearly the pulps of the fingers.

Now, this normal attitude of the hand may be changed in four ways.

1. A certain muscle or set of muscles may undergo atrophy, whereupon the antagonists of the same, which retain their tonus, will distort the hand in various ways.

2. Nearly the same thing occurs when a muscle or set of muscles is paralyzed without atrophy.

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* Des Deformations Permanentes de la Main au point de vue de la semeiologie, par H. Meillet, These de Paris, 1874.

3. A spasmodic state of certain muscles may distort the hand by destroying the equilibrium of the muscular groups.

4. Anatomical, pathological changes may take place in the framework of the hand itself, through which vicious attitudes may arise.

Thus deformities of the hand may be, for convenience, divided into four classes.

1. Atrophic deformities.
2. Paralytic deformities.
3. Spasmodic deformities.
4. Deformities of purely local causation.

I.—ATROPHIC DEFORMITIES.

Under this head will be first described the hand of progressive muscular atrophy. The fully developed muscular atrophic hand presents the deformed condition called commonly "main en griffe," or the claw-like hand. This deformity is by no means suddenly acquired, and in many cases of progressive muscular atrophy is never reached. In almost all cases, however, atrophy invades the hand somewhat, and a more or less perfect "main en griffe" results. When the disease invades the hand the patient notices that the hand easily tires and its capacity for finer movements is impaired. Soon the patient notices a falling away of the thenar eminence, and, from this time on, the atrophy extends, involving finally both thenar and hypothenar eminences, the interosseous and lumbrical muscles. The atrophy of the muscles of the thenar eminence and of the first interosseous space causes the thumb to separate from the hand and rotate on itself so as to make its palmar surface look in nearly the same direction as that of the fingers instead of in the opposite. This, together with the loss of the hypothenar eminence, gives a flat look to the hand, which causes it to be called "la main de singe," or the monkey hand. When the atrophy has reached and destroyed the interosseous muscles the typical "main en griffe," or claw hand, results. The trapezium and uniform processes of the carpus stand out in relief. The normal thenar and hypothenar eminences have given way to hollows in which the angular outlines of the first and fifth metacarpal bones are readily made out. The palm is hollowed out and very concave, and the interosseous spaces, instead of bulging as they should in the well-formed hand, are sunken and show the outlines of the metacarpal bones on both the dorsum and in the palm.

The first metacarpal bone is drawn toward the same level as the others, and is rotated outward on its longitudinal axis. Moreover, the antagonists of the thenar muscles cause the thumb to assume still further a vicious attitude. The extensor ossis metacarpi pollicis draws the

metacarpal bone out, while the flexor longus pollicis being stronger than the extensor secundi internodii pollicis, the two phalanges of the thumb, especially the second, tend toward flexion, thus giving the thumb very much the appearance of the fourth toe of birds.

The atrophy of the interosseous and lumbrical muscles leaves no antagonists to the long extensors and flexors, hence the former extend the first phalanges, while the latter flex the second and third.

Together with the deformity of the hand its intrinsic movements are restricted. Abduction, adduction, and opposition of the thumb are impossible. Flexion of the first and extension of the second and third phalanges, and ab- and adduction of the fingers are impared in proporportion as the atrophy of the interossei and lumbricales is partial or complete.

When these muscular changes have existed a long time there ensues a change in the fibrous elements of the hand, which seems to fasten it in this unnatural position and to prevent, even by the exercise of considerable force and the production of a great deal of pain, even a temporary return to its normal shape.

The description of the "main en griffe" as above given is by no means a constant sequel of progressive muscular atrophy, and for the following reasons. It is rare for the atrophy to be complete in the hands before it invades other parts, and if the long extensors and flexors of the fingers in the forearm are atrophied a typical claw hand cannot result.

Again, the atrophy may commence in some other part of the body, and the patient may die with the hand nearly normal or only slightly involved. Hence we more often see the "main de singe" (monkey hand) in progressive muscular atrophy, while the typical "main en griffe" is better exemplified in some cases of nerve injury or disease, as in leprosy.

The points in the differential diagnosis between this deformity and others resembling it are, first, the retention, to the last almost, of faradocontractility of the muscles; secondly, the common involvment of both hands; thirdly, the existence of atrophy in some other part of the body; fourthly, the progressive tendency; fifthly, the absence of anæsthesia, and also the clinical history. From the atrophy following any other spinal lesion or any cerebral lesion it is distinguished by the fact that it is preceded and accompanied by no paralysis or anæsthesia. From the atrophy following nerve injury it is distinguished by the facts, first, that its atrophy has no regular distribution, while that following nerve injury is confined exclusively to the physiological distribution of the injured nerve; secondly, because it was preceded by no paralysis and accompanied by no anæsthesia. From the atrophy following neuritis it is told

by reason of the absence of pain and anæsthesia, and by its irregular distribution, the atrophy in neuritis, as in nerve injury, being localized. From the occasional atrophy following lead-poisoning it is distinguished by the absence of paralysis, by the electrical reactions, and by the absence of a history of plumbism. From the atrophic hand of pachymeningitis cervicalis and leprosy it is easily told by its clinical history.

The history of the patient, whose hand is represented, is here inserted, as it is, in the most important details, a typical history.

The patient was Marie A. T——, St. Alexandre Ward of the Salpetriere Infirmary;* 40 years old; a maker of fringes. Her occupation called for continual use of the hands and the pressure of a round handle in the palm of the hand a good deal. About a year ago she noticed that when her hands were a little chilled it was very hard work to use them unless she rubbed them very hard.

Very soon she noticed decided loss of power in the hands, and asserts that at this time there was slight formication in the parts. Next she noticed a wasting of the thenar eminence of both hands, more marked in the right. A little later the hypothenar eminences began to fall away, and the interosseous spaces became sunken, and the hand gradually assumed a claw-shaped appearance. Of late shoulder movements have become difficult. She denies ever having had pain.

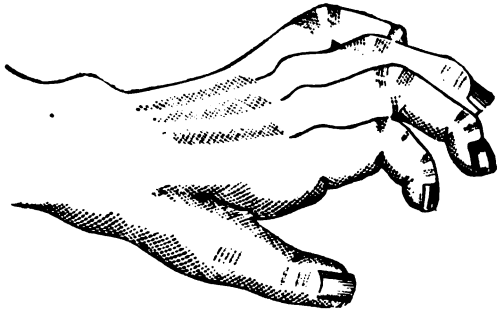


FIG. 1.—Left hand of Marie A. T——. A case of common progressive muscular atrophy.

May 17, 1880. Present condition: Atrophy of muscles of hand, forearm, arm and shoulders. More marked, however, in the hands, whose thenar and hypothenar regions are very flat, and whose interosseous spaces are sunken. The left hand, in particular, has assumed a partial "main en griffe" attitude. (See Fig. 1.)

* Service of Prof. Charcot.

The thumb is abducted and drawn back on a plain with the rest of the hand, while the last phalanx is flexed. The first phalanges of the fingers are slightly extended, while the second and third are slightly flexed.

Voluntary movements of the atrophied parts are very restricted, especially those of abduction and adduction, extension of the last phalanges of the fingers, and opposition of thumb. All vigorous efforts in that direction result in increased extension of the first and flexion of the two last phalanges. Complete closure of the hand is also impossible. As yet no rigid fixation has taken place, so passive movements can be made, although they are rather painful to the patient.

There is no impairment of sensibility, no tendon reflex in the hands, and an abnormally marked one at the knees.

Lower extremities are intact, and all the bodily functions are normal.

The next atrophic deformity of the hand described will be that of leprosy—morphœa alba or lepra anæsthetica. The hand of this disease when it is fully developed is a typical "main en griffe." The hand is entirely deprived of its fleshy covering, and the bony prominences and tendons everywhere show through the tightly drawn skin. The thenar and hypothenar eminences have vanished, the interosseous spaces are sunken, and the palm is extremely hollow. The hand is slightly extended, the thumb is rotated outward, its metacarpal bone is extended and its two phalanges flexed. The first phalanges of the fingers are extended, while the second and third are generally flexed, and in an advanced stage completely and tightly flexed. The long flexor tendons in the palm are very prominent and extremely tense. The hand is held very rigidly in this attitude, and, as might be well imagined, its intrinsic movements are almost, if not entirely, abolished. It is in this deformity of the hand, in particular, that some change takes place in the fibrous and articular apparatus of the hand which renders a restoration to its original attitude, even by force, almost impossible. With these atrophic changes there are apt to be ulcerative or tubercular affections about the fingers, and an impairment or, in many cases a complete loss of general sensibility in the parts. This form of leprosy, which receives its name because when fully developed the patient presents on various parts of his body patches of skin, large or small, generally white, which are entirely devoid of sensibility, is endemic chiefly in Egypt and Arabia, but is also known in almost all equatorial countries; also in more temperate countries, as Turkey, Greece, China, and even in some high latitudes, as in Norway and Sweden. In our country and France only imported cases are seen, and it was from an Egyptian who attended Prof. Charcot's clinic that the following history and sketches were taken. For the history I depend on my own notes taken

at the time and a full account of the case which appeared in the *Progres Medical*, Dec. 25, 1880, reported by Ballet, interne at the Salpetriere.

The patient, H. F., male, twenty-four years old, was born at Cairo, Egypt. He had no hereditary taint. The disease commenced at the age of eighteen. For many years before the patient had led a very dissipated life. He drank regularly about two litres of *raki* a day, besides a large quantity of wine, cognac, and absinthe; he consumed, besides, an enormous quantity of hashish; he smoked about fifty cigarettes a day, each containing fifty centigrammes of Indian hemp, and ate a pastile of the extract, weighing 1 50; he also carried sexual intercourse to a wonderful excess. The disease commenced by anæsthesia of the lower extremities; then the head and neck lost sensibility, and then the neighborhood of the nipples. Two years later the hands commenced to atrophy. Examination of the patient reveals the existence of large placques surrounded by a slightly elevated border, which is strongly pigmented. The skin in these zones is completely anæsthetic. One comprises the head and neck, two more each arm and shoulder, a small one surrounds each nipple, while another comprises the external genital organs. A very pronounced atrophy affects all the muscles underlying the anæsthetic areas.

The atrophy is very marked in the feet, legs, forearms, and hands, and also in the face, particularly the orbicularis palpebrarum, occipito-frontalis, and zygomaticus major.

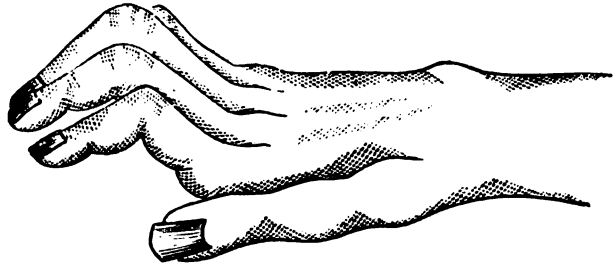


FIG. 2.—Right hand of H. F. Case of morphœa alba.

This facial atrophy gave a peculiar facies, as there was inability to close the eyes tight, and the atrophy of the oral muscles gave the patient a particularly woe-begone expression. There was an ulcerated keratitis with pannus in both eyes. As for the hands, which concern us particularly, they had lost about all their intrinsic muscular substance (see fig. 2), the thenar and hypothenar eminences had disappeared, and the interosseus spaces were very hollow. The hand had assumed an almost typical "main en griffe" attitude, and by local changes was pretty tightly held in this position. The intrinsic movements of the hand were of course impos-

sible. The patient could write his name by holding the pencil stiffly between his index and middle fingers, and by moving the hand as a whole.

The results of a careful electrical examination by Dr. Vigouroux showed that there was no response to either current where the atrophy was well marked, but that in a few muscles, as the peronei and the pyramidalis nasi, there was degeneration reaction to the galvanic current.

This deformity of the hand is easily distinguished from any other by the history, by the anæsthetic patches on the body, and particularly by the anæsthesia of the hands.

In myelitis of the anterior horns in the cervical region of the cord we have often a condition of the hands which, perhaps more nearly than any other, resembles the hands of muscular atrophy. Like it the atrophy is generally bilateral, and generally accompanied by no impairment of sensibility of the part; but unlike muscular atrophy that of myelitis is preceded by paralysis, and generally attacks groups of muscles or whole extremities, while muscular atrophy may invade and destroy a part of a muscle and leave the rest intact. In the hand of cervical paraplegia, also, we get a loss of farado-contractility and a degeneration reaction to galvanism.

The deformity resulting from myelitis of the anterior horns varies from a simple atrophy of the larger groups of muscles to a total atrophy of all the hand muscles. When the thenar eminence is atrophied we get simply the monkey hand, which is quite common, and when the other intrinsic muscles are involved there results a more or less complete "main en griffe," modified in many cases by a paralysis or paresis of the long flexors or extensors in the forearm.

The deformity of the hand, resulting from a common myelitis, differs in no way from that of myelitis of the anterior horns, except it is accompanied by anæsthesia. The man whose history and a sketch of whose hand is annexed, had a cervical myelitis chiefly confined to the anterior horns, but undoubtedly implicating the sensory zone somewhat, as evidenced by the sensory disturbance in one of his arms. His history was as follows:

P. C., male, forty-eight years old,* March 30, 1880, when intoxicated went to sleep on the floor of a cold room, in a draught. He was perfectly well at 12 o'clock, when he fell asleep. At 4 A. M., when he awoke, he found his arms were powerless from shoulders down, and that he had no sensibility from just above the elbows down to the fingers. Two weeks later he could move the right index finger slightly, and at the same

* Service of Dr. Seguin, Manhattan Hospital.

time sensibility had gradually reappeared in the whole arm, last in the right medius, which was also the last to regain its power of motion. When first seen, June 2, 1880, the patient could use his right hand a little, but there still remained a slight amount of numbness and sense of powerlessness. The left arm was quite helpless from the shoulder down, and there was no sensibility from a little above the elbow to the finger tips. The muscles were flabby and degenerated, and when asked to raise the

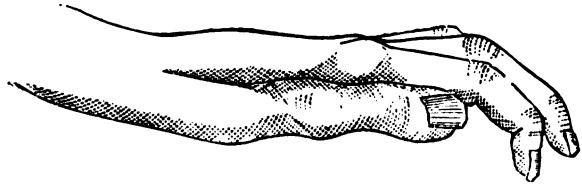


FIG. 3.—Left hand of P. C. Case of cervical paraplegia.

arms only the trapezius acted on either side. There was the reaction of degeneration in some of the muscles of the right upper extemity and in almost all of the left upper extremity. He was treated systematically with electricity for months and nothing new developed, except the knowledge that he had been subject to fits of psychical epilepsy for years.

At the time the accompanying sketch was made (see fig. 3) the right arm, forearm, and hand had entirely recovered, and the condition of the left was as follows: There still remained some atrophy in the suprascapular muscles. The arm muscles were nearly normal, but the forearm muscles

FIG. 4.—Right hand of case of cervical paraplegia in the service of Prof. Charcot at the Salpetriere.

responded poorly to faradism, and with a slight degeneration reaction to galvanism. Voluntary motion was possible in all parts above the wrist. There was no voluntary contraction of the intrinsic muscles of the hand, and in fact little of these muscles remained. Thenar and hypothenar eminences were gone, and the interosseus spaces were sunken. The extensor tendons stood out on the back of the hand, while in the palm the long flexor tendons were very salient. The position assumed was rather

that of the "main de singe" than the "main en griffe" The thumb had receded to the plane of the fingers, but the first phalanges, except those of the ring and little fingers, were not so much extended as usual in the claw hand. The joints were still mobile. Whatever reaction is present at all in the hand is a well-marked degeneration reaction to a strong galvanic current, although at times a slight response has been noticed to a very strong faradic current in the first interosseous muscle.

Sensibility is still poor in the forearm and almost nil in the hand, only the strongest faradic current being felt. Very often the galvanic application he now has (negative pole, labile) will bring out on the left arm and forearm a beautiful urticaria rash which lasts only a few minutes. At other times a fine, red, papular eruption follows the same application.

In amyotrophic lateral sclerosis there is generally first a spasmodic and then an atrophic deformity of the hand, but as the atrophic deform-

FIG. 5.—Right hand of Louisa ——. Case of amyotrophic lateral sclerosis.

FIG. 5½—Forearm and hand of Charcot's case of amyotrophic lateral sclerosis.

ity is most often seen and more permanent it will be introduced here. The course of the disease is so typical that only a *resume* of its symptomatology need be given. The patient complains of weakness, formication, numbness, or perhaps muscular pains of the upper extremities. Fibrillary twitchings, atrophy, and progressive paralysis soon follow. There may be, and generally is, before the paralysis and atrophy have advanced far, a contracture of the hand and fingers due partially to unopposed action of muscle still remaining healthy, but also to a true spasm of some muscular groups. There is adduction of the arm, semiflexion and pronation of the forearm, semiflexion of the wrist and fingers. Later in the course of the disease, after the atrophy and paralysis have progressed, this spastic condition generally relaxes, sometimes completely, and there remains the

"main en griffe" or "main de singe." At a variable length of time after the onset of symptoms in the upper extremities walking becomes difficult. The legs feel heavy, the feet drag, and the patient frequently falls. There exists, particularly in the legs, a muscular hyperæsthesia, and the patient has attacks of "spinal epilepsy," brought on by movements or contact, and consisting of jerkings, adduction of the thighs, and crossing of the feet and legs. Soon now the patient becomes bed-ridden, and the stiffness of the legs becomes permanent. Paralysis and muscular atrophy soon set in but are never so marked as in the arms. The head is bent forward, often so that the chin touches the sternum, and the spine is very rigid. At last labio-glosso-laryngeal paralysis sets in and death soon results.

The patient from whom fig. 5 was taken had entered the third and last stage of the disease, and her hand, as figured, was more atrophic than spastic. She was an embroiderer, æt. 49, and entered the St. Luke ward at the Infirmary of the Salpetriere Nov. 13, 1878.* This case had followed the typical course, and her conditition when the hand was figured was as follows:

She was bedridden. The face had a grinning demented look. Eyes staring, brows elevated, corrugators contracted, mouth half open, lips drawn and stiff; saliva dropped almost constantly from the mouth. Tongue was incapable of protrusion, thick and rough, articulation was impossible, deglutition was difficult, regurgitation through the nose, and frequently choking fits occurred. The head was pretty rigidly fixed on the chest. The upper extremities were not very rigid, but helpless; the lower extremities were rigidly extended, adducted, with the feet in extreme talipes equinus. The sensibility was good, voluntary motion was almost nil, and the reflexes enormously exagerated all over the body. The patient was very emotional, and simpers and cries easily. The atrophy was chiefly confined to the upper extremities. The hands, especially the right (fig. 5), were very much atrophied. All the fleshy eminences were gone, the palm was very hollow, and the fingers were spasmodically flexed into the palm. The hand itself, unlike Charcot's case, was about on a line with the forearm.

The only hand that amyotrophic lateral sclerosis could be confounded with, is that of progressive muscular atrophy or cervical paraplegia. The rapid progress of the disease and the existence of a spasmodic element would exclude the former, while the absence of complete paralysis and the preservation of farado-contractility of the muscles would exclude the latter disease.

* Service of Prof. Charcot.

The clinical history of the disease is so typical that a mistake is scarcely possible.

To exemplify the deformity of the hand which results when the spasmodic element predominates, there is inserted a figure 5½ from Charcot,* which he describes (p. 235) thus: "The arm is adducted and the shoulder muscles resist abduction. The forearm is semiflexed and pronated; supination and extension are difficult and painful. The hand is semi-flexed and the fingers are flexed on the palm."

In the hypertrophic cervical pachymeningitis of Charcot a peculiar deformity of the hand results, a description of which, as the writer has never seen a case, will be presented as given in the writings of Charcot, Jeoffroy, and Hallopeau.

The disease is generally divisable into two stages—the painful period and the paralytic and atrophic period. The disease commences by severe pains in the occiput and back of the neck, much aggravated by pressure on the spinous processes. These pains often radiate over the head, down the back, and down the arms, and there are, besides, frequent rheumatoid pains in the shoulders and elbows. The neck is kept rigid as in Pott's disease.

With these pains the patient complains of formication, numbness, and perhaps of some anæsthesia in patches, in the hands particularly. Bullous or pemphigus eruptions are sometimes seen. There are cases, however, in which the pain is chiefly peripheral, and confined almost entirely to the articulations. Sometimes a true remission intervenes between the two periods. This remission is not constant, however, and the two periods merge one into the other.

After a longer or shorter painful stage, two or three months, the patient notices a weakness and uselessness of one or both upper extremities. Very soon an atrophy commences in the hands and extends to the forearms. The muscles often more paralyzed and atrophied are the intrinsic hand muscles and the flexors of the fingers and hand. The pronators of the forearm generally suffer with the flexors. This leaves the extensors and supinators the only healthy muscles, and their unopposed action produces the deformity of the hand named by Charcot "la main du predicateur emphatique," which presents the following characteristics: The hand is extended and supinated. At times all the phalanges are somewhat flexed. At other times the fingers are extended. The thumb is applied to the side of the hand and slightly flexed. The hand itself is almost devoid of muscular covering. This atrophy and paresis generally soon

* Lecons sur les Localisations dans les Maladies du Cerveau, etc., Paris, 1876, p. 234.

invade the thoracic muscles, and in this way sometimes causes death. Of course when the secondary descending changes invade the lower cord, the lower extremities may become paraplegic with vesical and rectal complications, or tetanoid symptoms will develop as in descending degeneration from other causes.

This disease can hardly be confounded with any other, and may with certainty be distinguished from amyotrophic lateral sclerosis by the history of the painful stage, by the disseminated patches of anæsthesia and the occasional eruptions, and also by the entire absence of bulbar symptoms. The accompanying figures are copied from the works of Charcot, Jeoffroy, and Meillet.

The following is a *resume* of the case whose hand is depicted, taken from the monograph of Jeoffroy. (See fig. 6.)

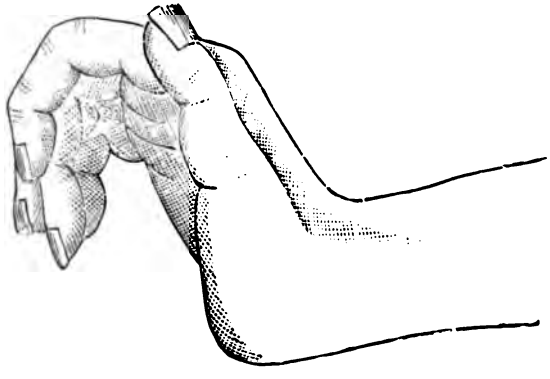


FIG. 6.—Right hand of Charcot and Jeoffroy's case of hypertrophic cervical pachymeningitis.

On Aug. 6, 1865, this woman, 29 years old, was exposed to cold and wet. During the next 48 hours she had repeated chills. At that time sharp pains commenced in both right extremities, chiefly in the course of nerves and in the joints.

In the middle of September the pains invaded the left side. At this time fibrillary movements were noticed in the right upper extremity.

Two weeks later there was noticed a difficulty in raising the right arm, in opposing the thumb and in ad- and abduction of the fingers. Atrophy had already set in in the region of the deltoid and in the intrinsic muscles of the hand.

In April, 1866, the right elbow was semiflexed, the forearm semipronated, the wrist semiflexed, and the fingers flexed in on the palm. This contracture could be voluntarily overcome by an effort of the will.

A month later contracture appeared on the left side. There were diminished electro-contractility and lowered temperature in the affected parts. The 12th of December all contracture had disappeared, and paralysis of the previously contracted muscles was marked.

Early in 1868 the patient came under the care of Prof. Charcot at the Salpetriere. She was very emaciated and bedridden from weakness and contracture of the legs. The left upper extremity was atrophied and flaccid, the right hand was extended at a right angle to the forearm, and the thumb was also extended, except the terminal phalanx which was semi-flexed. The fingers which could still be extended are flexed on the palm.

FIG. 7.—Left hand of another case of hypertrophic cervical pachymeningitis under Prof. Charcot's care. Taken from Meillet's monograph.

The forearm was flexed on the arm and the arm was adducted. All voluntary movements were abolished. There were some fibrillary contractions in the left hand. There was much anæsthesia, more marked on the right side. Electro-contractility was preserved, but quantitatively changed.

As deformities of the hand resulting from disease or injury of a peripheral nerve present many of the same characteristics a few words will be said about them together, and then special mention will be made about each variety.

Whether the nerve be injured by a neuritis, a neoplasm, by prolonged pressure, by bruising, laceration, or section, and the injury result in a

local disorganization, or any change which completely destroys the conductibility of the nerve fibres, the same results ensue. First, of course, there is a paralysis* and anæsthesia in the peripheral distribution of the injured nerve bundle. Next the muscles supplied by the nerve, being cut off both from their motor and trophic centres, atrophy, if the separation be complete, entirely; and, lastly, changes take place in the skin of the affected part, due to the anæsthesia and the cutting off of the trophic supply.

The limitation of all these changes to the exact distribution of the nerve injured, distinguishes the deformities due to changes in a peripheral nerve from any other. If regeneration of the nerve take place soon, the part may return to its normal condition, but when regeneration is slow or absent, degeneration of the muscular substance ensues, and we find they respond in an abnormal manner to galvanism. The trophic changes occuring after nerve injury are various. The skin is thin and smooth. The fingers are often clubbed, and the nails curved and frequently rough and brittle.

If there be much anæsthesia, as there usually is, the patient will frequently mechanically hurt the anæsthetic parts in various ways, or burn or freeze them, and troublesome indolent ulcers will result.

The distribution of the affected nerve is often the seat of sharp, tearing or burning pains, which are excessively harassing to the patient. One of the most common atrophic deformities of the hand due to nerve injury is that caused by contrusion at the elbow, or by section of the ulnar nerve at the wrist. The ulnar supplies, in the forearm, the flexor carpi ulnaris and the two internal portions of the flexor profundus digitorum; in the hand, all the muscles of the hypothenar eminence, the adductor pollicis, the inner head of the flexor brevis pollicis, the two inner lumbricales, the two inner interosseous spaces entirely, and the others either alone or in conjunction with the median nerve. Variations from this distribution are uncommon but not unknown.

The deformity resulting from a destructive lesion of the ulnar nerve at the elbow, or above is called the ulnar griffe (griffe cubitale of the French.) The griffe consists, first, in marked prominence of the unciform, pisiform, and third and fourth metacarpal bones, owing to an atrophy of the muscles of the hypothenar eminence, the interosseii, and two inner lumbricales. Secondly, in some want of fullness about the first interosseous space and thenar eminence, owing to the atrophy of the

* The temporary deformities caused by the paralysis of the first stage of nerve section, etc., will be mentioned when speaking of paralytic deformities of the hand.

adductor pollicis and the inner head of the flexor brevis pollicis. The vicious attude the hand assumes is first, perhaps, a slight extension of the hand on the forearm, with a slight depression over the site of the flexor carpi ulnaris and that of the outer half of the flexor profundus digitorum in the forearm. The first phalanges of the ring and little fingers are slightly extended, because the long extensors of the fingers are no longer resisted by the lumbrical muscles.

Their third and second phalanges are flexed by the flexor sublimis digitorum, there being no antagonists where the third and fourth interossei are paralyzed and atrophied.

The medius has generally much the same deformity as the annulus, but the index often has its normal position and motion, because its intrinsic muscles are, in most hands, supplied by the median nerve. The thumb retains its power of opposition while it has lost that of adduction and partially that of flexion.

After injury to the ulnar at the wrist the same state of things exists except there is no paralysis of the flexor carpi ulnaris, or of the outer half of the flexor profundus digitorum. The presence or absence of this paralysis has little effect on the resulting deformity, and so we see in all cases of ulnar injury a sort of "main en griffe," with contracture more marked in the ring and little fingers.

The following case came to the clinic of Dr. Seguin at the Manhattan Hospital, March 2, 1881. (See Fig. 8.)

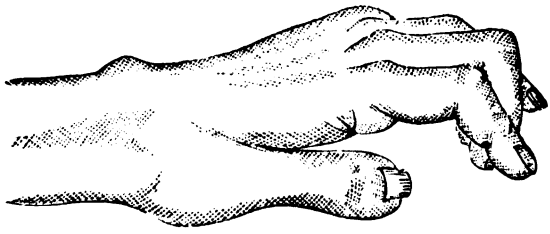


FIG. 8.—Left hand of patient E. H., with section of the ulnar nerve at wrist.

E. H., a janitress, forty-nine year old. Nine months before, while washing windows, she pushed her left hand through a thick pane of glasss, and on the sharp, fractured edge cut the flexor ulnar side of her forearm, near the wrist, to the bone. Immediately after the injury she noticed a prickling sensation in the ring and little fingers. Later they became swollen and painful. The cut healed in two weeks. At the expiration of that time, when the hand was taken off the splint, the patient asserts that the hand was flat and the fingers crooked. On examination it was seen that the eminences were flat. The two distal phalanges were flexed.

The thumb was abducted and semiflexed. The hand was somewhat swollen and the skin in great part smooth. The finger tips, particularly that of the annulus, were clubbed and the nails curved. There was almost complete paralysis of the intrinsic muscles of the hand. There was fair sensibility to painful impressions in the distribution of the ulnar nerve, but tactile sensibility was very poor. There was no reaction in any of the hand muscles to faradism, and degeneration reaction in all except, perhaps, in those of the second interosseous space, where An C C and Ca C were about equal.

Injury to the median nerve at the wrist results in a deformity of the hand, of which the following case is so perfect an example that it will be immediately introduced. (See fig. 9.)

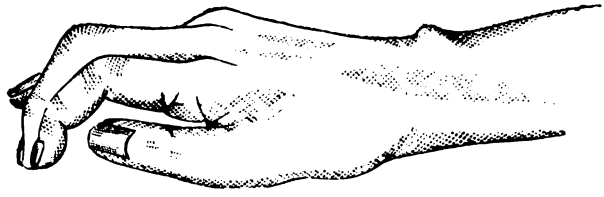


FIG. 9.—Right hand of C. K., with section of median nerve at the wrist.

C. K., a laundress, twenty-two years old, came to the clinic of Dr. Seguin at Manhattan Hospital, May 11, 1881. Three months before, while washing, she pierced her right palm with a needle. Suppuration followed, and on the fifth day two incisions were made, the one on the anterior surface of the wrist without question severing the median nerve. Three weeks later she first noticed anæsthesia in the index and middle fingers and on the pulp of the thumb.

At the time of examination there were anæsthesia, smoothness of the skin, and marks of burns and injuries in the median distribution. There was some falling away of the thenar eminence, a tendency toward extension of the first phalanges of the index and medius, and flexion of their last two phalanges. The intrinsic movements of these fingers are limited, if at all present. The thumb is adducted and has lost its power of opposition. The ring and little fingers are in normal position and of normal appearance.

The deformity resulting from musculo-spiral nerve injury will be mentioned under the head of paralytic deformities.

In injury to the brachial or axillary plexus (see figs. 10 and 11) hand deformities result, varying of course according as all or only few of the cords of the plexus are injured. The manifestations are not apt to be

restricted to the distribution of any one nerve, and the more common result of such injury is a general wasting and a common "main en griffe," as in the following case :

A woman, forty years old, in the St. Jacques ward of the Infirmary of the Salpetriere,* a tailoress by occupation, when twelve years old dislocated her right shoulder. Since then it had been dislocated six times.

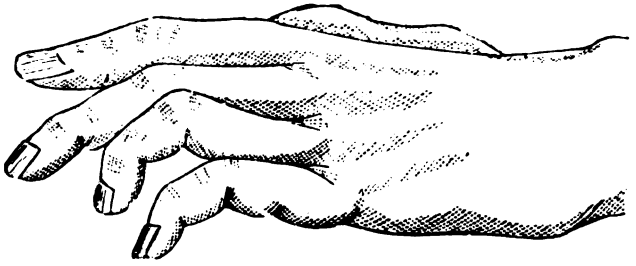


FIG. 10.—Left hand of Dr. Seguin's case of injury to the brachial plexus. Ulnar filaments chiefly involved.

The last dislocation occurred two and a half years ago, and was treated at Lariboisiere. Then the patient noticed for the first time that her hand was getting thin and that there was a very pronounced atrophy of that side. When examined May 15, 1880, there was some rigidity of the right shoulder. No atrophy of the shoulder, arm, or forearm muscles.

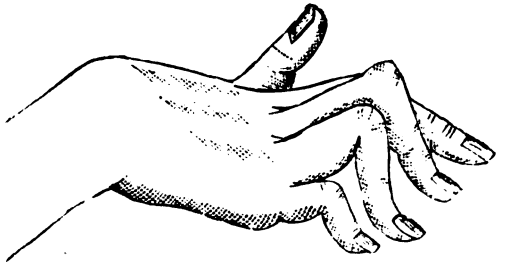


FIG. 11.—Right hand of Prof. Charcot's case of injury to the brachial plexus.

Apparently complete atrophy of all the intrinsic hand muscles. The thenar and hypothenar eminences were wanting, the interosseous spaces sunken, and the palm hollow.

The thumb was extended and rotated inward, the first phalanges were extended, the second were flexed, and the third about straight.

* Service of Prof. Charcot.

This case is not a typical one of nerve injury, as its course was not marked by pain or much impairment of sensibility.

The deformity resulting from neuritis differs in no way from that of nerve injury, but the clinical history is different, the severe pain particularly characterizing the first stage of neuritis.

The electrical reactions are the same as in nerve injury, and there commonly is anæsthesia.

K. G., a domestic, thirty-two years old, came to the clinic of Dr. Seguin at the Manhattan Hospital, August 4, 1880.

For two years she had had occasional pain over brachial plexus (right side). She had had no injury to shoulder. May 11, 1880, she cut her right thumb. It bled little, but that night the thumb was the seat of much pain, which by the next night had extended to the palm of the same hand. Later the pain ran from the thumb up the flexor surface of the forearm, and then the fingers began to flex until they acquired the position now occupied by them, they never having relaxed. The severe pain lasted about three weeks, but ever since there have been occasional twinges in the hand. There was at one time considerable swelling of the palm, but there were no indications that any suppuration took place.

On examination it was seen that the fingers of the right hand were semiflexed, fixed, small, smooth and provided with new nails. There was some atrophy of the eminences, and movements of fingers were restricted. (See Fig. 12.)

FIG. 12.—Right hand of K. G., a case of neuritis.

2.—SPASMODIC DEFORMITIES.

We now come to speak of spasmodic deformities of the hand, and of these the most common and well known is the permanent contracture of hemiplegics.

In a large proportion of cases of hemiplegia of cerebral origin, at the expiration of from one to three months, a variable degree of descending degeneration in the lateral columns of the cord has taken place. This lateral sclerosis is a lesion which irritates the cells in the

anterior horns of the spinal cord, and in this way greatly heightens the reflex irritability of the spinal cord and increases muscular tonus on the paralyzed side. As a result of this certain muscular groups on the heretofore relaxed and paralyzed side, generally the flexors, pronators, and adductors in the upper extremity, and the extensors and adductors

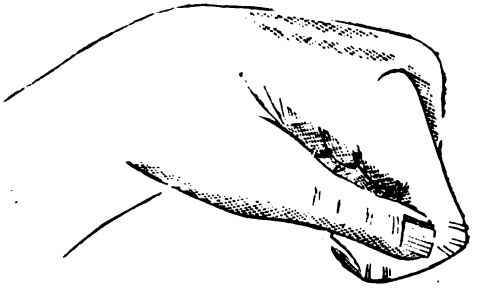


FIG. 13.—Right hand of a patient with common hemiplegia in the service of Prof Charcot.

in the lower extremity, take on a spasmodic action which results in the condition called permanent hemiplegic contracture.

That it is a purely reflex condition is proven in many ways, but principally by the fact that the contracture is increased by the application of any local irritation to the part, cold, electricity, a rapidly vibrating body, pressure, pain, etc., and by any effort to use the part, and that when the part is quiet and warm, as during sleep, the contracture may disappear, or at all events become less.

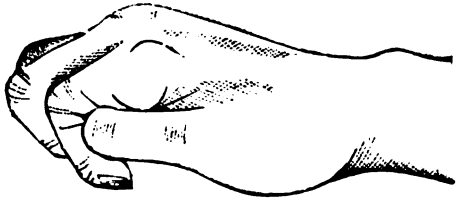


FIG. 14.—Right hand of common hemiplegics under Prof. Charcot's care.

This contracture is, as a general thing, accompanied by no atrophy, and by only slight tropic changes in the part. As a rule it it permanent, but it sometimes spontaneously disappears and leaves the part flaccid.

Hemiplegic contracture of the hand varies considerably, but it generally consists in flexion of the hand, inversion and flexion of the thumb, and flexion of the fingers into the palms (see figs. 13, 14, 15). This contracture may vary in severity from a gentle shutting of the hand to the closure of the fist like a vice, and a deep indentation or puncture of the

palm by the nails of the flexed fingers (see fig 16). This spasmodic conditions of the flexors can be overcome by the exercise of considerable force which gives the patient a good deal of pain. Many hemiplegic contractures, as beforesaid, relax of themselves when external irritations are reduced to a minimum, as during sleep. There is no atrophy or even emaciation.

FIG. 15.—Left hand of common hemiplegics under Prof. Charcot's care.

The hand is, as a general thing, well nourished, but, more from disuse than anything else, the skin is generally smooth and thin; sensibility is, as a general thing, preserved, and reaction to faradic electricity is retained; there may or may not be complete paralysis in the contractured part.

As said above, a voluntary effort to use the part increases the contracture. Not only this, vigorous voluntary movements of the opposite hand, particularly flexion, also increase the contracture.

This constitutes the phenomenon known under the name of "associated movements," and is present in many cases of hemiplegia where no contracture exists. Hemiplegic contractures are so common that no time

FIG. 16.—Left hand of a demented hemiplegic under Prof. Charcot's care.

will be given to the narration of a case, but several figures will be introduced to demonstrate their different phases.

When a destructive cerebral lesion causing hemiplegia occurs in very early childhood, the limbs on the paralyzed side seldom, if ever, attain the same development as those on the other side. There may also be left

a spasmodic or a paralytic deformity. Of the latter we will speak later on, of the former now. This particular deformity is designated as that produced by cerebral atrophy.

In the infant, as in the adult, hemiplegia generally develops contracture. The position is also generally that of pronation and flexion of the hand and flexion of the fingers. In young children the osseous, cartilaginous, and ligamentous structures of the wrist joint are soft and malleable, so to speak, and the result of a long continuance in a vicious position is a permanent change in the articular structures, rendering a normal attitude and movement of the hand almost impossible. The deformity of the hand resulting is generally as follows (see fig. 17). The forearm is semiflexed and

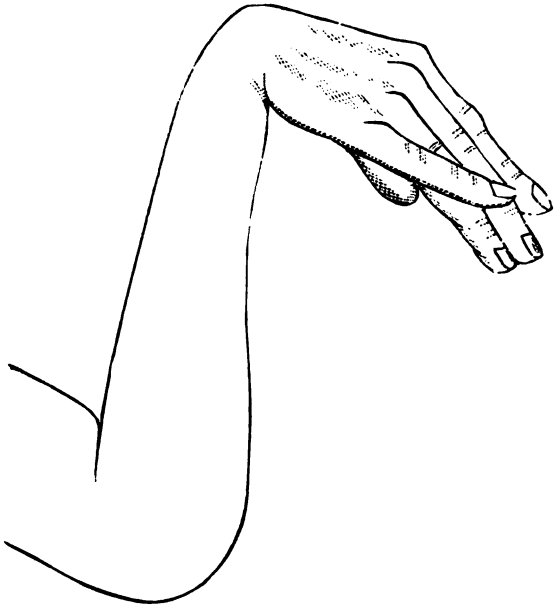


FIG. 17.—Right hand of John M——, Dr. Seguin's case of infantile hemiplegia and cerebral atrophy.

partly pronated, the hand is strongly flexed on the forearm and is generally inclined more to the ulnar side, while the fingers are generally slightly, if at all, flexed on the palm.

Extension of the wrist is almost impossible, the palmar edge of the carpal bones having become thin, and very likely the articular end of the radius being also bevelled off on its palmar aspect. The hand is smaller than its fellow, and may or may not show some general atrophy. Voluntary movements will be very restricted, while there may be athetoid movements and very surely associated movements in the deformed hand.

Sensibility is generally preserved and electro-contractility (unless there be atrophy) normal.

The following case is typical:

John M., 21 years old, came to the clinic of Dr. Seguin at the Manhattan Hospital, Aug. 9, 1881.

The mother states that soon after the birth of the child she noticed he had strabismus. When the child was about four months old she began to notice a weakness of the right arm and leg.

When three years old the child had two fits in rapid succession. Three years later he had another fit, and since then he has had typical epileptic attacks at intervals of six or eight weeks to the present time. The hand has been contractured for many years.

Examination revealed that there was a slight ptosis of the right eye, which was in external strabismus. The pupils were equal and optic nerves normal. The tongue deviated toward the right side, and the right face was weak. The walk was pretty good, but hemiparetic. There was no talipes. There was marked atrophy in the extensor region of the right forearm, and when the forearm was flexed the hand and fingers were in the attitude called "cou de cygne," which has been already described. An attempt to extend the wrist causes flexion of the fingers, and *vice versa*. There are the usual hemiplegic reactions to electricity, and there is no anæsthesia. The hand is much smaller than its fellow and is very weak.

The next spasmodic deformity considered will be hysterical contracture. Like all other hysterical manifestations it conforms to no regular laws. The more common form resembles, in a great many particulars, a hemiplegic contracture. The forearm is generally firmly flexed and supinated. The hand is sharply flexed, more toward the ulnar side of the forearm. The thumb is inverted and the fingers tightly clenched into the palm of the hand.

Forced extension of the fingers is accomplished with great difficulty and with apparent pain to the patient, and when they are released they instantaneously return to their former position. The contracture can also be reduced by very strong faradization of the extensors, by static electricity, and by the magnet, as shown in the case submitted later. There is no atrophy, no trophic change, no loss of electro-contractility in the hand or forearm. There is, however, often a local or hemi-anæsthesia, achromatopsy, and loss of the senses of smell and taste on the same side with the contracture.

The history often reveals other hysterical manifestations, as convulsions, ovarian symptoms, globus, etc., etc., which, together with the other symptoms, will serve to distinguish an hysterical contracture from any other.

Sometimes there is contracture of one finger or the thumb only, as in a case reported by Dr. Adam. The case occurring in Charcot's service at the Salpetriere, and so ably treated and reported by Dr. Vigouroux, will be given in detail, as it is typical.

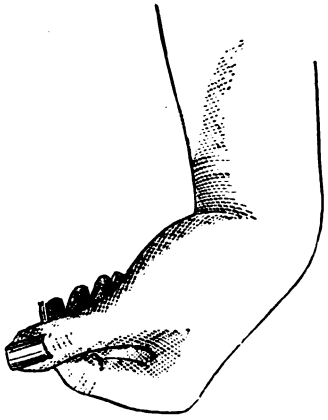


FIG. 18.—Left hand of Pauline J., Prof. Charcot's case of hysterical contracture.

The patient was Pauline J.,* twenty-six years old, of large frame, ruddy complexion, muscular, and rather masculine in build, and left-handed. There were no antecedents. She began to menstruate at seventeen. The menses were always regular, but preceded by lumbar and hypogastric pains. July 17, 1874, while menstruating, sat in a cold place when overheated, and had a violent chill, accompanied by general hyperæsthesia. She was put to bed, when a violent headache came on. The chill lasted two hours, but the sensation of cold continued till a fever, with delirium, came on, which lasted eight days. The headache lasted fourteen days. After the headaches came hypogastric pains, with a sense of constriction, accompanied by retention of urine. The first attack lasted forty-eight hours, and these attacks occurred frequently in the next three years, four or five times. This attack was replaced by attacks of incessant vomiting. In November, 1877, one evening, she felt a numbness of the left hand, and on trying to raise it it fell inert. That night a sort of coma came on and lasted three days, preceded by intense headache. Nine days of somnolence, with headache, followed. The flaccid left hand soon began to grow rigid, and in three weeks it was closely shut. The patient

* Contracture hysterique du poignet gauche. Traitement par la production artificielle repetee d' une contracture du poignet droit. Disparition de la contracture primitive. Applications variees de l' electricite. Par le Dr. Romain Vigouroux. PROG. MED., 31 aout, 1878, p. 679, et seq.

had noticed a feebleness of the left leg, also; she had become emotional and had acquired a globus. She never, however, had any regular hysterical attacks.

On admission,* June 3, 1878, the left hand was flexed at a right angle, and the fingers were tightly flexed on a roll of linen held in the palm. The elbow and shoulder joints were mobile, but could not be voluntarily moved. There was no atrophy, and farado contractility was retained. There was complete anæsthesia of the entire left upper extremity. The left half of the face was analgesic. The left ear, affected with tinnitus, was deaf. The left eye perceived colors, but had diminished acuity of vision. Smell was diminished, and taste abolished on the left side. Pressure on the vertex and all down the spine was very painful. There was pain—made worse by pressure—in both ovarian regions.

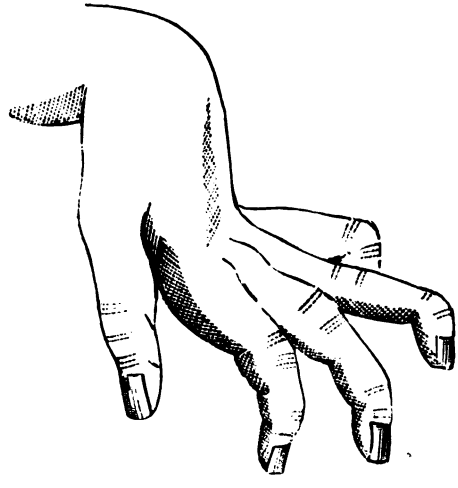


FIG. 19.—Right hand of a patient of Prof. Charcot's with athetosis.

Suffice it to say that various experiments were tried with the electromagnet, solenoid, common magnet, galvanic, faradic, and static electricity, and finally a course of treatment was commenced by repeatedly producing a contracture on the right side with a strong magnet, which finally left the patient, July 23d, with no contracture, no anæsthesia, and with slight voluntary movements of the left fingers and wrist.

The ultimate recovery of the left upper extremity was apparently perfect. In the spring of 1880, however, the contracture and anæsthesia

* Service of Prof. Charcot.

reappeared, and the patient returned to the clinic of Professor Charcot for treatment, and it was at that time, (May 10, 1880) that the accompanying drawing was made. There was anæsthesia of the left upper extremity, no voluntary movements below the elbow, no atrophy, flexion of wrist to about a right angle, and tight flexion of the fingers and thumb on a linen compress in the hand. This contracture could not be overcome by any force safely applied to the fingers, but could be readily overcome

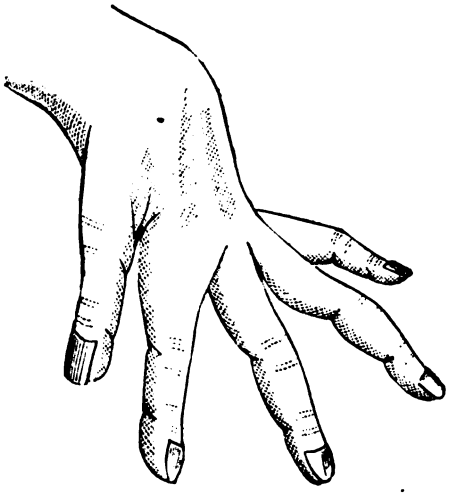


FIG. 20.—Right hand of another patient of Prof. Charcot's with athetosis.

by strong faradization to the extensors of the hand and fingers in the forearm. When last seen this case was under treatment by faradic and static electricity, and the occasional application of the magnet, but had not yielded, as before, to any treatment.

Athetosis is another condition which can be classed with contractures as a spasmodic deformity of the hand. Athetosis is not always a sequel to hemiplegia. It is confined to the extremities of one side however, and appears generally after an appopletic attack, a hemi- or general spasm, a severe headache, an aphasia, a vertigo, or some other manifestation of serious cerebral disturbances. Some weeks or months after such manifestations, which generally are hemiplegic, it is noticed by the patient that he is unable to keep his fingers and toes still, and that when left to themselves, and sometimes in spite of him, they are continually in motion. These movements are slow and vermicular, resemble in no particular any other or any voluntary movement. They consist in alternate flexion and exaggerated extension, abduction and adduction of the fingers and thumb, all usually meanwhile being kept straight, the movement chiefly occurring at

the metacarpo-phalangeal articulation. The more common attitude is extension and wide separation of the fingers and thumb. These movements are continuous, and only in a few cases can be entirely stopped by an effort of the will. The movements are aggravated by an attempt to use the part or the opposite hand, and are accompanied by a good deal of pain. There may or may not be impairment of sensibility in the part, generally none.

FIG. 21.—Right hand of a peculiar case of hemiplegia, followed by athetosis in the adult. Service of Professor Charcot.

Continual exercise often causes an hypertrophy of the affected muscles, so that the arm and leg of the affected side are often larger than the opposite, and of great hardness. There is, however, a real loss of voluntary power in the part. In many cases there occur occasional epileptic paroxysms, and there is generally considerable failure of the mental powers. There are seen no trophic changes in the parts, and no change in the electrical reactions of the muscles.

The above remarks sufficiently cover the clinical aspects of the disease, so that it will suffice to say that the patients from whom two of the accompanying sketches were taken were idiots about thirteen years old, affected with infantile hemiplegia and partial epilepsy, in the service of Prof. Charcot at the Salpetriere (see figs. 19 and 20).

A peculiar deformity of the hand occurs in the course of the disease known as paralysis agitans. This disease, rarely seen, except in adults past forty, begins by a slight rythmical tremor generally in the hand, or the fingers of one hand. This tremor gradually increases, becomes more general in the extremity first attacked, and then invades the other extremity on the same side, and perhaps later the corresponding extremity on the opposite side, and even toward the last, though rarely, all four extremities. The exciting cause of the disease appears in many cases to be a mental shock of some kind. The movement is generally continuous during waking hours and absent during sleep; is made worse by excitement of any kind, and is aggravated by a depressed mental or physical condition. In almost all cases it can be temporarily stopped by a strong effort of the will. The continual motion causes no such hypertrophy as athetosis, and is very tiring to the patient, who often complains of severe pains in the muscles, which are the seat of tremor. The movement which is characteristic of the disease when fully developed is this: the arm is slightly abducted and the shoulder has a tendency to fall forward and inward on the chest, the forearm is flexed to nearly a right angle, thus bringing the hand in the neighborhood of the pubes, the most natural attitude for the patient.

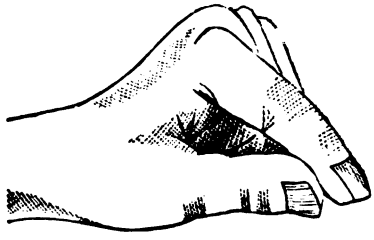


FIG. 22.—Left hand of a case of paralysis agitans under Prof. Charcot's care.

The hand is not generally flexed, but the fingers are semiflexed in a nearly straight condition, and the thumb is generally nearly opposed to them; the more common attitude then being that in which we hold a pen when writing. The fingers generally have the deviation toward the ulnar border of the hand, as in chronic rheumatism. Such being the position of the hand, now for the movements.

Often there are slight flexions and extensions of the forearm and wrist. The fingers continually oscillate in movements of slight flexion and extension, which give the hand a pawing motion, and which, with opposition of the thumb, give the hand the appearance as if rolling a thread or paper ball between the fingers and thumb.

Later in the disease distortions like those in rheumatism may still further deform the hand, and atrophy may supervene from prolonged disease, and the electrical reactions may be modified, but in the uncomplicated disease they remain unchanged.

Late in the disease there comes on a marked rigidity of the spine, with flexion and projection forward of the head and neck, a fixed, stooping attitude, and a marked shortening of the stature. Slowness of speech and mental impairment often are present, and a symptom common to almost all is an unnatural subjective warmth, of the body at night, or whenever they are in bed, leading them to require much less covering than other patients in the same ward, or than they themselves did before their sickness. The following is the history* of a typical case in which the tremor was very general:

The patient was a woman in the St. Alexandre ward of the Infirmary at the Salpetriere under Prof. Charcot's care. She was sixty years old. Twelve years before she had a crying spell, brought on by some intense emotional disturbance. She noticed immediately afterward a weakness of the arms, first the right. Soon after the legs became weak, the right first. At the same time there were some cramps. Tremors appeared first in 1873.

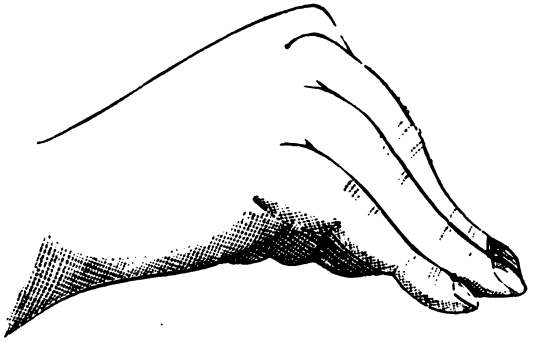


FIG. 23.—Right hand of a second case of paralysis agitans under Prof. Charcot's care.

The following notes were taken July 8, 1874:

The mouth is open about a centimetre; the lower lip falls. There is some difficulty in deglutition. Her sleep is often broken by pains in the fingers; she is always hot. The legs are adducted and the trunk strongly bent forward. The arms are slightly abducted and flexed, so as to bring the hands into the sub-umbilical region. The thumb is slightly flexed, and

* Taken partly from the hospital records.

the index is semiflexed, and the other fingers are semiflexed together. The head is fixed and rigid.

At the time the sketch (fig. 22) was made, June 19, 1880, the condition of the patient was little changed. She had not walked for several years, and could not raise herself in bed. She is taken out of bed and sits doubled up in a chair. The head is inclined to the left shoulder and slightly forward, and is fixed. There is some tremor of the lower lip and tongue when protruded. Her arms are slightly abducted, the elbows are flexed, and both hands rest in the lap near the pubes, and are in continual motion, of the ordinary pawing variety. There is ulnar deviation of the fingers and a contracture of the hand, which can be overcome by force. There is considerable atrophy of the first interosseous muscle. There is considerable tremor of the left foot. The parts which are the seat of spasm are also painful, and not only is sensibility retained, but there appears to be some hyperæsthesia of the legs.

3.—PARALYTIC DEFORMITIES.

Under the head of paralytic deformities, of course, is included the temporary condition of the hand immediately after various nerve injuries.

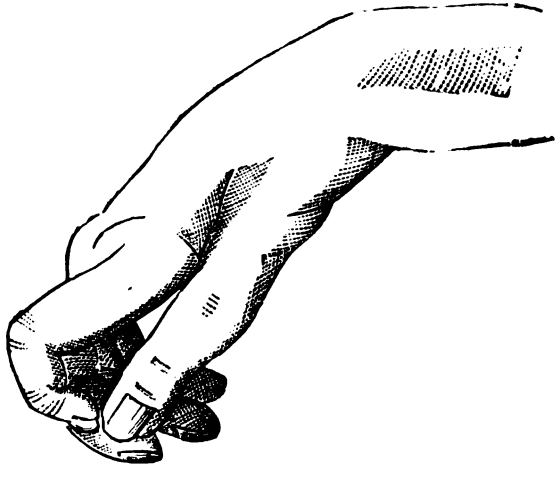


FIG. 24.—Right hand of a case of plumbism, characterized by "drop wrist" and atrophy, under Dr. Seguin's care.

This is especially true of the deformity produced by injury to the musculo-spiral nerve. This deformity is simply a drop wrist, and this is to be spoken of immediately under lead paralysis, where all the points in differential diagnosis will be fully brought out.

A person after exposure to lead in various ways, by inhalation, by swallowing, and in all probability sometimes endermically, and commonly

after some other toxic manifestations of the poison, as colics, constipation, cachexia, etc., rather suddenly notices an inability to extend the wrist and fingers, generally on both sides. Examination reveals the existence of drop wrist. There is partial or complete paralysis of the extensors of the hand and fingers.

Unlike the drop wrist from injury to the musculo-spiral nerve the supinator longus escapes in saturnine paralysis. The electrical reactions are, however, much the same, very soon showing the degeneration reaction to galvanism and loss of farado-contractility.

There is very apt to be a tumefaction on the back of the hand in these cases at first. If the paralysis remain long without treatment, atrophy may take place in the paralyzed area. There are no trophic changes, and there is generally only slight impairment of sensibility. As in the case here presented the paralysis is not always limited to the extensors.

Male, aged 42, first seen at the clinic of Dr. Seguin in the fall of 1878.* In July of that year, while he was occupied as cook on a freshly painted yacht, he woke up one morning with loss of power in both arms. He said he was in the habit of drinking water just from the tap every morning, and that this water was conducted through a lead pipe from the tank.

On Sept. 20th, when first examined he had double drop wrist, some flattening of the thenar and hypothenar eminences, and preservation of the supinator longus. He had had no colic, and there was now no blue line on the gums.

Oct. 12th there was noticed for the first time a swelling on the back of the wrists.

Three years later he again came under observation. The drop wrist still persisted. There was much atrophy of the thenar eminences and of the first interosseous space. The grasp was good, Extension of the two last phalanges was possible in all fingers except the right index. There was some adduction but no opposition of the thumb possible. They were inverted and their distal phalanges were flexed. There was some impairment of sensibility in this case, and degeneration reaction in all the paralyzed and atrophic area.

A deformity of the hand which may supervene after an infantile hemiplegia, besides the permanent contracture already spoken of, is that which is called retarded development. This hand, which has little of the element of spasm or contracture about it, is essentially a paralytic deformity. The hand is simply smaller and less developed than its fellow. It is well nourished, mobile, properly shaped, has no atrophy, and

* Part of the history was taken from the records at the College of Physicians and Surgeons.

generally no anæsthesia. It is very weak, and perhaps the occasional seat of associated or athetoid movements. Its electrical reactions are normal. Sometimes, as in the case furnishing the subject for the accompanying sketch, there is a slight tendency toward contracture, but it offers no resistance and the part is generally very limp.

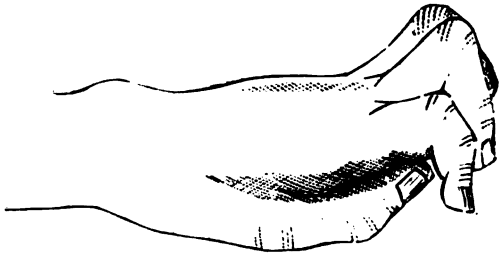


FIG. 25.—Left hand of K. B., patient of Dr. Seguin. Old hemiplegia and retarded development.

K. B.,* a girl of fourteen years, had a hemiplegic attack at the age of three. She never fully regained power on the left side, though at the time the sketch was made, June 8, 1881, the walk was hardly hemiplegic. The most noticeable feature in her case is the weakness and small size of her left upper extremity. The hand is perfectly shaped, and there is no atrophy, but it is very much smaller, as the following measurements will show:

	HEALTHY SIDE.		PARALYZED SIDE.	
Circumference of the wrist	16.	cm.	12.5	cm.
Circumference of the hand below the first phalanx of the thumb	27.5	"	17.	"
Circumference of the hand at the head of the metacarpal bones, excluding the thumb.	19.	"	15.	"
Length of medius	10.	"	8.5	"
Circumference of its first phalanx	5.75	"	5.	"
Circumference of the thumb	6.25	"	5.25	"

At times, as for instance when this sketch was made, there is a slight tendency to contracture in the hand of this patient.

4. DEFORMITIES OF LOCAL CAUSATION.

An exhaustive description of hand deformities of local causation would hardly be in place in a journal devoted to neurology, however important they might be. Brief mention, therefore, of a few will be

* Service of Dr. Seguin at the Manhattan Hospital.

made, illustrated as well as may be by sketches. Arthritis deformans (the chronic progressive articular rheumatism of Charcot), as a disease by itself, is seen chiefly in people of adult life. It quite often begins in peripheral parts and tends in a centripetal direction. It is very slow in its progress, and its course is marked by very many intermissions. It often commences by a painful swelling of one or more finger or toe joints. The swelling is not accompanied by much heat, redness, and no subsequent desquamation, as in gout. The joints implicated are apt to

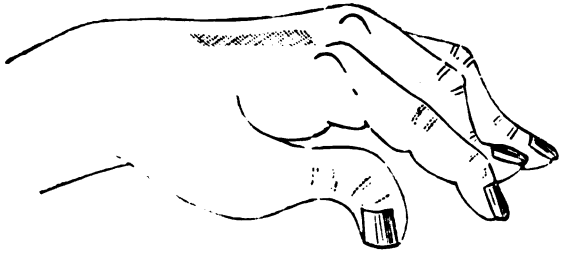


FIG. 26.—Left hand of a patient with arthritis deformans under Prof. Charcot's care.

be symmetrical, and the inflammatory process leaves them more or less anchylosed and distorted. Successive attacks recur in the same joints and implicate new ones, until a more or less complete anchylosis and marked deformity result. The disease, when advanced, implicates the larger joints of the body, even those of the spinal column, everywhere causing anchylosis and deformity. There are not always marked bony deposits about the diseased joints and nerve deposits outside the joints, as in gout. In most all cases, as a result of combined muscular action

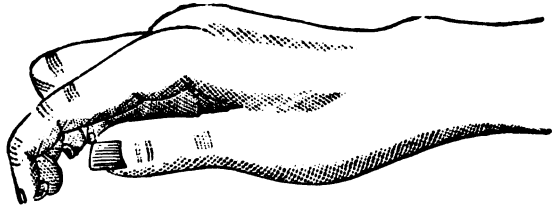


FIG. 27.—Right hand of a case of arthritis deformans under Dr. Segnin's care.

and bony deposits in the joints, their is a deviation of the fingers toward the ulnar side of the hand. Beyond that there are no very typical de formities. There is often seen an extension of the first phalanges, a flexion of the second, and an extension of the third. (See fig. 26.) In others all the phalanges are more or less flexed. (See fig. 27.) The

thumbs generally escape. The course of the disease is frequently marked by œdematous swellings of the hands.

From disuse and possibly from some spreading of the disease to the nerves or muscles very marked atrophy of the intrinsic muscles of the hand ultimately ensues. Subluxation of the phalangeal joints sometimes occurs, and remarkable thinning and smoothness of the skin often ensue.

In rheumatic arthritis and sometimes accompanying acute articular rheumatism deformities of the hand are found, but they are not very typical. The disease is not always symmetrical; a single joint may be affected for years and a cure sometimes results. The inflamed joint is swollen, hot, and red, and very tender and painful. In almost all these particulars the disease differs from arthritis deformans.

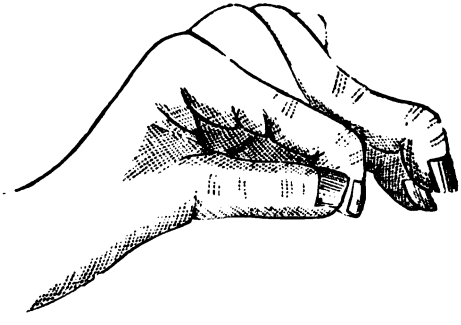


FIG. 28.—Left hand in cases of rheumatic arthritis under Prof. Charcot's care.

The deformity it leaves resembles that of arthritis deformans (see fig. 28) by presenting generally an ulnar deviation of the fingers and more or less osseous deposit about the joints. It differs again by often invading the thumb, which it leaves with extension of the last phalanx, giving it a curved appearance represented in fig. 29.

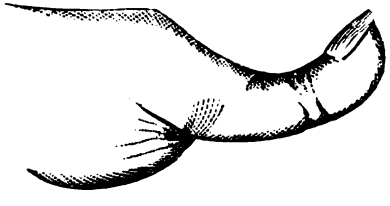


FIG. 29.—Left thumb in cases of rheumatic arthritis under Prof. Charcot's care.

The gouty might easily be mistaken for the rheumatic hand, particularly that form consisting simply of articular enlargements, anchylosis, and ulnar deviation of the fingers, were it not for the typical history the

gouty case presents. When, however, the hand presents also the characteristic collections of urate of soda, or tophi, the deformity can be confounded with no other. These tophi present globular swellings, situated on various joints, varying in size from a pea to a pigeon's egg,

FIG. 30.—Gouty hand with tophi. Taken from Meillet.

covered by a thin bluish skin, often surrounded by tortuous, hardened veins. The indolent ulcers into which these concretions often break down would also be a mark of diagnostic value. (See fig, 30.)

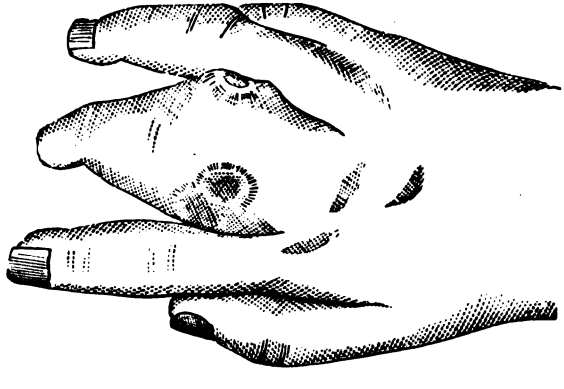


FIG. 31.—Hand with syphilitic dactylitis. Taken from Bumstead and Taylor's "Pathology and Treatment of Venereal Diseases." Phila., 1879.

The deformities produced by syphilitic dactylitis resemble in some features those of gout or rheumatism, but the clinical history, with the anatomical characteristics, will serve to distinguish them.

The deformity resulting from contraction of the palmar fascia cannot possibly be mistaken for anything else, and all that is necessary is to introduce a cut copied from Meillet.

FIG. 32.—The hand of scleroderma.

The bulbous finger tips and curved nails of cyanosis and phthisis need only figures borrowed also from Meillet.

FIG. 33.—Hand of cyanosis.

FIG. 34.—That of phthisis, taken from Meillet.

The writer having seen but one case of scleroderma, and not having at command a sketch of her hands, borrows another illustration from

Meillet, and regrets that space does not allow a brief *resume* of that interesting disease. At some future date a separate monograph may be

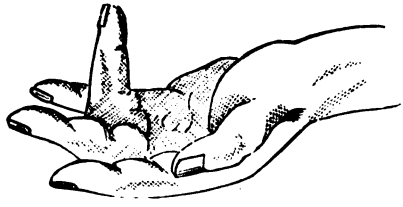


FIG. 35. Contraction of the palmar fascia. Taken from Meillet.

made to treat more exhaustively of deformities of the hand of local causation, and perhaps those of a surgical nature, all of which are necessarily crowded out of an article like this, which treats simply of "medical" deformities.

CORRESPONDENCE.

OUR LONDON LETTER.

LONDON, January 18, 1882.

The name of Mr. Jonathan Hutchinson, of the London Hospital, is so well known in America, that a few words relative to a somewhat unpleasant and at the same time ridiculous attack which has been made upon him in the newspapers, may perhaps interest your readers.

It appears that Mr. Hutchinson a few weeks ago admitted to his wards a man suffering from pemphigus. This, as every one knows, is an obstinate and dangerous skin affection, which not unfrequently kills by the constitutional irritation which it causes. In a clinical lecture, which Mr. Hutchinson delivered at the bedside of the patient, the following sentence occurred: "we keep him in bed for a few days before we use the magician's wand in order that all might see there was no tendency to amelioration." These words were pounced upon by the *Daily News*, the leading liberal journal of London, and distorted into a charge of "experimenting on patients," as the vivisectors are supposed to do on animals. The charge of course is as absurd as it is foundless, but nevertheless it has given rise to a great deal of correspondence of a more or less acrimonious character. As is always the rule in these cases, the pauper public, which is benefited chiefly by the gratuitous services of great surgeons, accepts them with the

least gratitude and the most suspicion. Mr. Hutchinson's position in the medical world is fortunately impregnable against such attacks, but what has happened to him may happen to less known men. Moral: In clinical lectures be careful what you say at the bedside in the hearing of the patient or his friends.

While on the subject of general hospitals, I regret to say there has been another death at S—— through the culpable mismanagement on the part of one of the nurses It may be remembered that about two years ago the medical and surgical staff came to an open rupture with the treasurer and committee of the hospital, who championed Miss Linsdale, the matron, and practically enabled her to carry on the nursing of the hospital independently of the physicians and surgeons. The senior physician and surgeon resigned at the time, and since then a sort of compromise has been arrived at, though as may be supposed there is not a great deal of love lost on either side. The sisters and the subordinates have, however, been unlucky, to say the least of it, in their attempts at amateur medicine. The third death has now to be recorded against them, this time by poisoning. It would appear that ten grains of quinine had been ordered for a patient, but by some inconceivable and gross stupidity, ten grains of morphia were administered instead, by a nurse "who had just recovered from illness," and according to the matron was therefore probably excited and nervous and more than usually prone to error. The obvious answer is, why was she sent on duty? The real truth is that the nursing question, not at Guy's alone, but at several of the large hospitals in London, is in about as unsatisfactory a condition as it well can be. The lay committees over-ride the medical, or rather completely swamp them by the greater number of their votes. Unfortunately no immediate remedy can be applied, for these hospitals are really large and wealthy corporations, and can only be dealt with either by a special act of Parliament or by a royal commission. The great depression in agriculture and the fall in the value of land in England has greatly affected the revenues of some of the older hospitals, whose property consists chiefly of farm lands. St. Thomas' has suffered more particularly and has been obliged to open some pay wards. The revenues of St Bartholomews' and Guys' Hospitals are very large, averaging over $200,000 annnally. It is impossible not to feel that the best is not being done with these immense sums. The medical relief, to begin with, is too indiscriminate, and on too large a scale. The outpatient departments are little short of a public scandal, and have been so for many years. The class of persons who attend are many of them far from being objects of charity. Moreover they are allowed to come in such vast shoals that it is quite impossible for any physician or surgeon to examine and prescribe for individual cases with

becoming thoroughness. Hence, injustice to the patients themselves, to the poorer members of the profession, and to the junior staff of the hospital. As centres of scientific instruction the great hospitals fall far short of what they might be. The physicians and surgeons seldom succeed to the charge of wards till they are past middle age. They have spent the best years of their lives in the unscientific drudgery of the out-patient department, where there has been neither time nor opportunity for study or teaching. I hope to return to this subject by and by, for it is one that will bear discussion.

There is probably no capital in the world which affords such material for clicical teaching as London. In this respect, as I can say from personal knowledge, it is far ahead of Vienna, Paris, Rome or New York. But in no other capital is it so difficult to get systematic clinical instruction, whether on general medicine or on a specialty. The student here must teach himself or go ignorant. It is a curious state of things, but due I believe in the main to the vicious system on which the great hospital appointments are filled up. A man is chosen not so much for his capacity, as because he was educated at the medical school attached to the particular hospital. There is no competition as in Paris or Vienna. quite a subordinate matter, being relegated to a few so-called "grinders," There are no *agreges*, no *privat-docents*. Teaching is looked upon as that is, men who do not practice, or only incidentally, but who devote their whole time and energies to "coaching men" up for examination. The system is a thorougly bad one, and could never have lasted so long anywhere but in conservative England.

The trial of Dr. Lampson for poisoning his brother-in-law by means of aconite, has now entered upon its third and last stage. The preliminary examinations before a magistrate and the coroner have resulted in his being committed to Newgate. He will next appear at the Old Bailey before one of her Majesty's judges, and there he will be either finally acquitted or condemned to suffer the extreme penalty of the law. The evidence against him at present is most damnatory. I am well acquainted with Mr. Bond and Dr. Dupre, the chief medical witnesses for the prosecution, and have learned many interesting particulars from them as regards the case. These I forbear to mention at present, but shall hope to do so as soon as the real and final trial at the Criminal Court is decided.

The first meeting of the year of the Ophthalmological Society was held at their rooms last week. The only novelty presented to members was a self-registering perimeter designed by Mr. McHardy of Kimp College, confessedly after a model exhibited by Dr. Stevens, of New York, at the recent International Medical Congress. Mr. Mc Hardy's improve-

ments consist chiefly in certain details of mechanism. The instrument is an expensive one, but if it should induce both specialists and general practitioners to examine the field of vision more frequently than the majority of them do at present, it will be cheap at any price. Meanwhile it is a most ingenious and showy instrument, and will probably take its place before long in the armamentarium of every ambitious young oculist. Those, however, who have been longer at the business are apt to attach less value to novelties of every kind, whether in drugs or instruments. Mr. Mc Hardy's perimeter is made by Messrs. Pickard & Curry, Great Portland Street, London, and costs about $40.

During the last month the very interesting exhibition of smoke consuming apparatus will be continued at the South Kensington Museum. Here some two hundred grates of all sizes and patterns may be seen daily at work, burning ordinary coal, coke, anthracite, and various patent fuels without producing any visible products of combustion. The consumption of smoke in London is now becoming a question of the very highest importance from a sanitary point of view. It is almost certain from recent observations that the peculiar density and unwholesomeness of London fogs arise chiefly, if not entirely, from the great quantity of the products of combustion which enter into their composition. Among these products the most hurtful are probably free sulphurous acid, and minute portions of carbon in the form of soot. There are also present various organic compounds such as certain empyreumatic oils, which probably keep the aqueous particles separated from one another, and in that way increase the density and persistence of the fog. Some idea of the deadly nature—the term is not to strong—of a London fog may be formed from a few statistics. February, 1880, was one of the worst fog months of late years. In one week the mortality of London rose to forty-nine per thousand, the average being twenty. Comparing this with the recorded deaths in any of the great epidemics of cholera, small-pox, or typhoid fever, which have of late years swept over this metropolis, we find that not one of them, except during the week of the cholera of 1848, can show such a mortality. London fog is most baneful when associated with a low temperature. Such a combination is especially fatal to the aged, who rapidly under such combined influences succumb to bronchitis and pneumonia. Any measures, therefore, which would deprive the fog of at least a portion of its noxious qualities would be a surpassing boon. The object of the exhibition of it is to educate public opinion on the matter, to stimulate inventors, and to show how much has already been done towards consuming smoke in a cheap and effective manner. The exhibition is supplemented by lectures on the chemistry of combustion by men of known scientific ability, and these attract very

xt week there is to be an exhibition at the Crystal
ppliances. It is to be hoped medical electricity will
lare of attention. I shall take care to inform your
struments or improvements on old ones in the forth-
hich bear on this important branch of therapeutics.

LITTÓN FORBES.

T., COVENT GARDEN.

TORY MANIA FROM OTALGIA.

TAIN MEDICAL TIMES:

part of the year which has just closed, a gentleman,
actor and builder, came to my office complaining
e left ear. I introduced a speculum and examined
ire but was unable to detect any abnormal condition.
nal parts I observed some redness and swelling over
I dropped into the ear equal parts of glycerine and
: in a pledget of cotton. I ordered a saline cathar-
e powders of morphia, one-fourth grain each to be
our hours if the pain should continue.

home and apply cold cloths, and if the pain did not
t fomentations. He followed my instructions assid-
g increased steadily until midnight, when he sprang
zy than the detested assassin Guiteau when he lev-
on on our much lamented and honored President),
arge six-shooter, and snapped it as many times at
were in his room. Fortunately a few days previ-
ie bullets, consequently did no harm except to
is friends. I arrived at his room about one hour
when I found him lying on the bed completely
uggle which he had with his comrades. There was
: to understand him, from incoherency of language,
ceive that he was suffering intensely. I made a
grain of morphine, which was given subcutaneously,
owdered ice to his head.

bed-side an hour, hoping to hear him say that he
the same excruciating torment continued. I used
ting the same dose that was given an hour before.
bout fifteen minutes he said he felt better; shortly
slumbered quietly for nearly three hours. When he

aroused from his sleep the pain began to return again, one of the gentlemen who was present all the evening gave another morphine powder immediately, which I instructed him to do if it was required.

When I visited him the following morning found him quite comfortable. He had not the slightest recollection of what had transpired the previous night, and was exceedingly astonished when his companions told him what he had done Let me say here that he never carried a revolver when in the city, and only occasionally when attending to his mining interests in the mountains. It was so me five or six days before he was entirely relieved.

This case, having passed from my memory, was recalled by reading a somewhat similar case reported by Dr. Kibbe, which I find among the many instructive articles in the first number of your valuable journal.

It was identical in as much as transitory mania existed in both. But the *cimex lectularius*, which caused the trouble in Dr. Kibbe's case, was not the offender in the one which came under my observation.

As mania in any of its varions forms is being so thoroughly discussed, and attracting so much attention throughout the length and breadth of our land, anything pertaining to it may not be considered out of place.

C. P. BURNS, M. D.

DENVER, COLO.

PROGRESS IN SKIN AND VENEREAL DISEASES.

BY M. A. WILSON, M. D., DENVER.

ACUTE PROSTATITIS.—Mr. R. Harrison, *Medical Times and Gazette*, in a paper on this affection, states: There are two conditions which simultate it, one of which has led to the impression that this disease (acute prostatitis) is far more common than it really is.

The first is inflammation and suppuration around the membranous portion of the urethra, as a consequence of urethritis; and the second, inflammation and plugging of the veins constituting the prostatic plexus.

The points of resemblance between the first and prostatitis are numerous. In both there is a cessation or an alteration in the character of the urethral discharge; in both there is a feeling of weight and uneasiness about the perineum; in both there is some difficulty in micturition, perhaps amounting to retention; in both there is some tumefaction to be felt, and much distress is occasioned on introducing the finger into the rectum. * * * * * * * * * *

It must, on the other hand, be remembered that in inflammation and suppuration around the membranous urethra, though this part lies between the layers of the perineal fascia, there is more or less perineal tumefaction, and that matter so formed may make its way forward and be discharged by means of the perineal opening. In the cases of acute prostatitis I have seen, neither of these two indications have been present, while in urethritis I have usually observed them.

Considering the relations of the prostate and the denseness of the fascia immediately in front of it, I do not see how perineal tumefaction is to be expected as a consequence of prostatitis, any more than swelling in this locality is to be associated with the hypertrophy of the gland as it is seen in old age. * * * * * * * * *

The other disordered condition which may simulate prostatitis is rare, and it is also curious. I have seen only two cases of it. The primary lesion was rapid œdema of the prepuce, dependent upon plugging of the dorsal vein of the penis. This was quite obvious. In the course of a few days each complained of perineal weight, frequent, rather painful micturition, with great uneasiness referred to the neck of the bladder, which led to its being suggested that in each case the prostate was inflamed. In each I was able to determine by rectal examination, that the vesical pain and irritability were not due to any inflammation of the gland, but to the extension of the vein-blocking to the prostatic plexus. —Dr. E. B. Bronson, *New York Medical Journal.*

PSORIASIS FROM BORAX.—W. R. Gowers, M. D., in a communication to the *London Lancet,* shows quite conclusively that an eruption of characteristic psoriasis may result from the internal administration of borax. The facts have been met with in the use of borax in the treatment of obstinate cases of epilepsy, in which the bromides fail. The first instance was in the case of a man who had taken borax for nearly two years in doses of first fifteen, then twenty grains, three times daily.

An eruption of psoriasis made its appearance on his limbs and trunk, developing to a considerable extent in the course of a few weeks. Five minims of arsenical solution, (what solution is not stated. M. A. W.), were added to each dose of borax, and the eruption rapidly disappeared.

Dr. Spencer, of London, makes exactly the same statement both as to the cause of the eruption and its cure. In a third case of Dr. Gower's, that of a young man afflicted with epilepsy from infancy, the employment of borax in the manner above given very much benefited the epilepsy, but after eight months this same skin lesion manifested itself. Arsenic was added but the result of the treatment had not been ascertained. The eruption in these cases occurred on the trunk, arms

and legs, more on the arms than elsewhere. The face was free. It was located on both the flexor and the extensor aspects. The patches varied in size, up to an inch and a half in diameter. Their appearance was quite characteristic, but the scales were not so thick as they sometimes are in ordinary psoriasis. In no such case was there a history of syphilis, and in Dr. Spencer's patient syphilis could, with certainty, be excluded.—*Medical Abstract.*

SYMPTOMS OF CANTHARIDES POISONING DURING ITS INTERNAL ADMINISTRATION FOR GONORRHŒA.—T. F. Clark, M. R. C. S., *London Lancet*, gives the details of two cases of poisoning as above. The drug was employed in the treatment of gonorrhœa, its later stage. He prefaces his remarks by stating that, "in nearly every case of gonorrhœa for the primary symptoms—e. g., scalding, chordee, etc., with thick discharge—I prescribe saline medicines and tepid water injections. When the discharge becomes thinner, and all active inflammation has abated, I prescribe iron and cantharides internally (tincture of the perchloride of iron and tincture of cantharides, of each five minims, three times a day), and an injection of sulphate of zinc (two grains to the ounce). Such was the course followed in the present instances." The first patient was virtually cured at the end of five days, but a week after the discontinuance of the cantharides mixture he was attacked with violent pain over the bladder, accompanied on the following day with strangury.

Nitric ether and hyoscyamus internally, with hot baths whenever the strangry came on, were ordered. The symptoms passed off at the end of about four days. "In the second case the patient, after taking two doses only of the cantharides mixture, had some of the symptoms of poisoning; viz., frequent desire to pass urine, burning pain during micturition, which was very difficult, and always accompanied towards the end of the process by a few drops of blood. I ordered him to take only half the dose, but these directions were not followed, and he continued with the full dose, the symptoms, nevertheless, rapidly abating."

In each case every trace of the gonorrhœa was removed, and as soon as the active symptoms produced by the cantharides passed off, the patient felt as well as ever, and had not the slightest discomfort in the urinary organs. "Why these symptoms of poisoning should have presented themselves—for I frequently administer the drug in much larger doses, and without any untoward symptom—I am at a loss to understand. The delay of symptoms in the first case may, I think, be explained by the supposition that the drug became stored up in the kidneys and that after a short time its cumulative action gave rise to the poisoning symptoms."—*N. Y. Medical Gazette.*

SMALL-POX RAVAGES IN CHICAGO.—The *New York Medical Record*, Dec. 10, 1881, states: Of 1,359 cases of small-pox in Chicago since January 1st, forty per cent have proved fatal. It is noteworthy that by far the greater number of cases have occurred in those districts where the more degraded portion of the foreign element lives, and where attempts at vaccination have been met by open violence at times. In that portion of the city there are 40,000 persons who have not been vaccinated, and of the 108 deaths in September, 81 occurred among these.

It is believed that the publication of these facts will create such a sentiment as will result in almost universal vaccination and in increased diligence in the matter of cleaning the streets. In this city (New York) there have been over 270 deaths from small-pox in the past six months, but only about 75 of these occurred in the past three months ending December 10th.

VACCINATION IN SCOTLAND.—Scotland is greatly in favor of vaccination. Dr. Robertson's report of the vaccination of children born in Scotland in 1879 states that only one individual refused to have his children vaccinated. Small-pox has not caused much trouble since 1874, in which year there were 1,246 deaths. In 1880 there were only ten fatal cases.—*British Medical Journal.*

THE TREATMENT OF EPIDIDYMITIS.—Service of Dr. R. F. Wier, *New York Hospital.* No remedies for internal administration are mentioned. The local treatment consists in the application of an ointment composed of XXX grains of iodoform to the oz. of glycerine. combined with this may be added 1 drachm of balsam Peru to control the disagreeable odor of the iodoform.

This form of treatment gives very good results. A second plan is to apply a bag of ice to the part. If this causes pain of the genito-crural nerve, or of the scrotum, a few layers of woolen cloth may be applied between it and the part. If it will do any good, it will be during the first twenty-four hours. If it does not relieve the pain in that time, other treatment should be resorted to.

An old method of treatment was to make a poultice of tobacco and linseed meal and apply to the part. This will relieve the pain. Morphia may be substituted for the tobacco.

Strapping of the scrotum has been suggested in this disease. But compression will do little good, as it will take a long time anyway to get rid of the swelling.—*N. Y. Med. Gazette*, January, 1882.

THE TREATMENT OF HYDROCELE.—On December 15th, 1881, at *Bellevue Hospital, New York*, Dr. Weir presented four cases of hydrocele performing four different operations for their radical cure; viz., in the

first case injecting the tincture of iodine into the sac containing the fluid, in the *second* injecting pure carbolic acid, in the *third* injecting a ten per cent solution of carbolic acid, and in the *fourth* case performing Volkmanns operation. In the latter case there was found to be considerable inflammation and thickening in the sac, and it was not expected that the patient would recover as soon as if it were a simple case. One week later the patient on whom the pure carbolic acid injection was made was again presented at the clinic, and the inflammation and enlargement had almost entirely subsided. The advantage of this method over that by the injection of the tincture of iodine was that there resulted less serous exudation prior to the adhesion of the two opposing surfaces of the tunica vaginalis.—*Medical Record*, January, 1882.

TREATMENT OF HYDROCELE AND SEROUS CYSTS IN GENERAL BY THE INJECTION OF CARBOLIC ACID.—Dr. Lewis states that he has been experimenting, with a view of determining what substance may best secure the obliteration of the secreting surface and the adhesion of the walls of the cyst with the most certainty and the greatest freedom from suffering and danger.

Having selected carbolic acid as an agent which would provoke simply a plastic inflammation, he injected one drachm of the deliquesced crystals into the sac of a large hydrocele. The new procedure was entirely painless.

A sense of numbness alone was experienced, and no inconvenience was felt until, on the next day, the desired inflammatory process was developed. A nine years hospital and private experience leads the author to believe that this method is the most satisfactory for the object. For the purpose of injection crystallized carbolic acid is maintained in a liquefied state by a five or ten per cent solution of either water or glycerine; the crystals are to be reduced to the fluid state with no more dilution than may be necessary for this. After the usual tapping, he injects the liquefied crystals with a syringe having a nozzle sufficiently slender and long enough to reach entirely through the canula. He has never been able to detect any general toxic effects upon the system, but believes that the action of strong carbolic acid on surfaces secreting albuminous fluids is to seal them, to shut them off from the system in such a manner that absorption cannot readily take place The occluding influence of strong carbolic acid he regards as an important surgical resource in certain cases of compound fracture, destructively lacerated wounds, and ulcerating surfaces, where septic infection is inevitable.

All forms of serous cysts which are usually subjected to any form of operative treatment, on the principle of producing plastic adhesion of their walls, may be deemed amenable to the treatment indicated.—*Ibid.*

THE ORCHITIS OF MUMPS.—This form of orchitis is not a metastasis, but a complication that can be watched for. It occurs only after puberty, and comes on between the seventh and ninth day generally. Its approach is indicated by a rise of temperature which occurs before any pain is felt. By keeping the patient in bed, taking the temperature, and at once applying hot poultices to the testicles as soon as fever appears, the symptoms are greatly mitigated —Dr. C. Dulges, *Lancet.—Ibid.*

CURIOUS RELATION BETWEEN DIPHTHERIA, ECZEMA AND ERYSIPELAS. —Dr. G. H. Felton. of Lynn, Mass., relates the following history: 'On the 15th of November, a boy, eight years of age, after an illness of five days, died of laryngeal diphtheria. One week later I was called to see his brother, about eighteen months old. This child had been suffering for some months from aggravated eczema of the scalp, and during my attendance upon the previous case his head was covered with crusts, though he was said to be much better than previously. At this time he was a strong, well-nourished child, with good appetite, and, with the exception of the eczema and a bronchitis of a few weeks standing, apparently in vigorous health. I was sent for on account of a swelling under the jaw, which, under the circumstances, the parents feared might be diphtheria. The eczema was, at the same time, becoming considerably aggravated. I found that the swelling extended around the neck, being as marked posteriorly as elswhere, and, on examination could find no evidence of diphtheria, and so informed the parents. Struck, however, by the suspicion of an erysipelatous inflammation, remembering also the diphtheritic contagion to which the child had been exposed, and in view of the occasional association of the two diseases, I prescribed tinct. ferri perchlor. in liberal doses with potass. chlorat. The case grew continually worse, however, and three days later his head was immensely swollen, one eye closed and emitting a sanguino-purulent discharge. The swelling posteriorly extended down to the nates, the face and neck presented the appearance of erysipelas, while the scalp was a mass of corruption. The cough was loose and the secretion abundant; but, while an examination of the throat was now impossible, there was no more evidence of diphtheria than at my first visit. The child died the next morning, no new symptoms having intervened." Dr. Felton offers, in explanation of these clinical facts, the plausible theory, that the poison of diphtheria in the first patient acted upon the eczematous scalp of the second, producing an erysipelatous inflammation. This idea is in harmony with current views regarding the relation of diphtheritic and erysipelatous poisons.—*Ibid.*

ERGOTINE IN ERYSIPELAS.—Mr. Kenneth W. Millican used ergotine locally, in an outbreak of facial erysipelas in his practice, with the best

results. The relief to heat and pain, the reduction of swelling, and the rapid subsidence of the disease, were most remarkable.—*British Medical Journal.*—*Ibid.*

ARSENIC IN THE TREATMENT OF LYMPHO-SARCOMA.—In a late communication, Prof. Frank H. Hamilton speaks most highly and favorably of the use of arsenic as above. His own personal experience is not by any means extensive, but "wonderful" so far as it goes, and he subjoins the experiences of several others. Different writers have designated this disease as follows: *Adenoid disease*, Southey. *Anæmia lymphatica*, Wilks. *Adenee*, Trousseau. *Diathese Lymphogene*, Jaccoud. *Sarcoma of the glands*, Langenbach. By the English, *Hodgkin's Disease*. By Lucke, *Lympho-Sarcoma*; this latter term having been adopted by Virchow and most wrirers. Dr. Hamilton continues: "In 1872 I wrote, lympho-sarcoma is occasionally observed in connection with the lymphatic glands of the neck, forming enormous tumors, which are little amenable to treatment, and generally occasion death by their interference with respiration and deglutition."

To quote from his present article: "It is my present opinion that the exceedingly grave prognosis given by myself and probably by most other writers until a very recent period, is no longer justifiable; but that by a proper administration of arsenic, a certain proportion of these cases may be cured, and a still larger proportion greatly relieved. * * * About three years ago a man consulted me, who was by trade a carpenter, and about fifty years of age. He was a man of temperate habits, and had generally enjoyed good health. Several months before he consulted me, the lymphatic glands on the left side of his neck began to enlarge, and when seen by me there was an enormous bosselated tumor occupying all the space between the ear and the clavicle, and extending from near the spine to the trachea. My impression is that it interfered some with both respiration and deglutition. His general health was greatly impaired, and although dependant upon his labor for a living, he had for some time been compelled to suspend work altogether. He was sent or came to me to enquire whether I would recieve him as a hospital patient and cut out the tumor." The patient was informed that a successful operation was impossible, inasmuch as the disease was a constitutional affection and that, as lymphatic enlargements were probably already existing in other portions of the body, the operation if successful, would be useless. He was ordered Fowler's solution, three drops three times daily, and to increase the quantity from time to time until, if his stomach would tolerate it, he took six drops three times daily. In about two weeks he returned to me improved in health and the tumor sensibly diminished in size. In about six

weeks it was reduced to one-half, and at the end of three or four months it had disappeared entirely, and he had returned to his work. I have never seen him since, and think it may, for that reason, be presumed that it never returned.

Two other cases, adults, the glands of the neck being primarily affected in one, those of the groin in the other, were treated in the same way, the result being a very manifest subsidence of the tumors.

In the *International Journal of Medicine and Surgery*, January 29, 1881, p. 89, occurs the following (a translation of a paper written by Dr. J. Israel, and published th Berlin *Klin. Wochensch*, No. 52, 1880): The malignant lymphomata are, therefore, in the full sense of the term, *malignant tumors*, and yet under certain circumstances, they are curable by arsenic. For the first authentic observation of the fact, in the year 1871, we are indebted to Billroth; next to him, some encouraging experiences of Czertry were published by Tholen, and, finally, all the cases which fell under Billroth's observation, were collected by Winnewarter. All these prove without exception, that in many cases arsenic possesses an indubitable influence in diminishing these tumors."

Dr. Israel then describes a case in which the lymphatic glands were greatly enlarged on both sides of the neck, particularly on the left, where the enlargement extended into the pharynx; also the sub-maxillary and axillary glands. She was pale or greenish, had difficulty in breathing, in hearing and in speaking. She was ordered liquor potass. arsenit., two drops three times daily. At the end of four weeks this was increased to six drops, and after ten days the amount was gradually diminished. At the same time Dr. Israel used an arsenical solution as a hypodermic injection into some of the cervical and pharyngeal tumors. At the end of nine weeks she was dismissed without any trace of the disease.

"I have omitted to mention that, as a consequence of the injection into the pharyngeal portion of the growth, this portion swelled so considerably that the necessity for tracheotomy almost presented itself."

The direct injection of arsenic or any other irritating agent into the substance of these tumors is discountenanced by Dr. Hamilton, inasmuch as the temporary inflammation which they cause endangers life, by impeding respiration, or by interfering with the circulation of large blood vessels, or with deglutition. Injections have occasioned just such results.

The value of arsenic in this disease evidently depends upon its constitutional effects, and especially upon its direct influence upon the nervous system, or upon its power to impart tone and vigor to the whole body.

The employment of electricity as a mode of dispersing tumors is subject to the same criticism, there being a liability always to inflammation, with increased swelling.

The iodide of potassium has been very frequently administered in cases of lympho-sarcoma, but, in almost all cases, with negative results. —*N. Y. Med. Gazette.*

PROGRESS IN OPHTHALMOLOGY AND OTOLOGY.

By A. B. Kibbe, M. D.,

OPHTHALMIC SURGEON TO ST. LUKE'S HOSPITAL, DENVER.

Influence of the Choroid on the Acuteness of Vision.—M. Fano believes that in addition to the usually accepted theory of the function of the choroid ring to absorb the luminous rays of light, it has a more important function. For inasmuch as it is preeminently a vascular organ, it serves to supply to the retina the greater part of its nutritive elements as the central artery of the latter membrane could not furnish it with so great an amount of functional activity.—*Gaz. Med. de Paris*, Dec. 24, 1881.

The Practical Examination of Railway Employees as to Color-blindness, Acuteness of Vision and Hearing.—Dr. Thompson's conclusions on this subject are as follows:

1. That there are many employees who have defective sight, caused either by optical defects, which are, perhaps, congenital, and which might be corrected with proper glasses, or due to the results of injuries or diseases of the eyes, remediable or not, by medical or surgical treatment.

2. That one man in twenty-five will be found color-blind to a degree to render him unfit for service where prompt recognition of signals is needed, inasmuch as color-blindness for red and green renders signals of these colors indistinguishable. It is a fact in physiological optics, however, that yellow and blue are seen by those color-blind for red and green, and that yellow-violet blindness is so rare that it might lead to the use of these yellow and blue colors, in preference to red and green, wherever possible.

3. That color-blindness, although mainly congenital and incurable, is sometimes caused by disease or injury, and that precautions might be needed to have either periodical examinations or to insist upon it in

cases where men have suffered from severe illness or injury, or when they have been addicted to the abuse of tobacco or alcohol.

4. That the method, when adopted, will enable the authorities to know exactly how many of their employees are "satisfactory in every particular" as to sight and hearing; and that the examination will have the further value of making the division superintendents acquainted with the general aptitude of the men in their divisions as to general intelligence.

5. That the entire examinations can be made at the rate of at least six men an hour; whilst that for color sense alone can be done in a very few minutes for each man by an intelligent employee.

6. That to secure the confidence of the employees, and of competent scientific critics, as well as of the public generally, it is advisable to have some official professional specialist to whom all doubtful questions could be referred, and who should be held responsible for the accuracy of the instruments, test cards, etc., to be put in use, and who should have general supervision of the entire subject of sight, color, sense and hearing.

7. That from the impossibility of subjecting the immense number of employees on our large railways to the inspection of the few medical experts available, and to secure the examination of those hereafter to be employed, some system of testing by the railway superintendents has become a necessity, and it is believed that the one prepared will answer the purpose.

The test for color-blindness proposed by Dr. Thompson is made of colored worsted, such as are used in Holmgren's method, arranged on a stick and numbered from one to forty. The even numbers representing the test green, the odd ones the various confusion colors. In watching the test green from the stick, the worsted bearing even numbers only should be chosen, so that in case any odd number appears among the results of the individual's examination, it is at once apparent that he is color-blind, The results obtained are then referred to some competent specialist, who decides on the question of fitness for employment. This plan does not necessitate the presence of the specialist, as any one of moderate intelligence can perform the mechanical work necessary. Appropriate tests for hearing and acuteness of vision are also given.—*Med. News*, January 14, 1882.

Malarial Keratitis.—Dr. F. C. Kotz gives the following discription of the appearence of the cornea in this affection: Draw within the compass of the cornea the outline of a small lanceolate leaf with its stem at the margin of the cornea, and its tip in the centre. Have the central

vein of this leaf run a slightly zigzag course, and let the lateral veins be short. Now erase the outlines of the leaf and the skeleton of the veins is a correct representation of the specific character of a malarial ulcer of the cornea. These cases are reported to show its peculiar course, and the effects of quinine in cutting short its progress. In two of these cases atropine was used without benefit. Lachrymation, photophobia, etc., remaining the same. Suspecting the character of the ulcer to be malarious, quinine was administered; two grains every two hours. The same evening the urgent symptoms had not abated, and on the following day the injection had nearly disappeared. A slight opacity remained to mark the seat of disease, which, however, gradually disappeared. He calls attention to the necessity of early recognizing the specific character of these ulcers in order to prevent the formation of extensive opacities. —*Chicago Medical Journal*, December, 1881.

Treatment of Gonorrhœal Conjunctivitis by Division of the External Commissure, and Fixed Eversion of the Lower Lid.—By this method of treatment the external commissure is divided, and the lower lid everted, and held down by a stitch inserted into the cheek. This method offers considerable advantage over that proposed by Critchett, who bisects the upper lid. The great objection to his plan is that deformity may ensue in the healing of the divided parts. Fuchs reports two cases of recovery under the use of his method. In both turbidity of the cornea had occurred, which finally cleared up. In addition to the division of the commissure, and fastening of the lid, cold applications were employed, and perfect cleanliness observed.

Discussion on Sympathetic Ophthalmia, International Medical Congress. British Medical Journal, Oct. 8, 1881.—In the discussion on this subject, the following was the general belief as to the symptoms. 1. Dilatation of the posterior lymphatic spaces and closure of the anterior lymphatics of the globe. 2. An infective plastic inflammation of the uveal tissue. The iris becomes infiltrated and covered with solid exudation. The anterior chamber is lessened; the tension which at first is diminished is increased before the transmitted affection shows itself; the perichoroidal lymph-space, and the perineural lymph-sheaths of the optic nerve are dilated. Mycrophitic organisms are also found. The hypothesis that sympathetic ophthalmitis is to be explained by reflex action through the ciliary nerves is devoid of all convincing proof. It is rather to be looked upon as due to a septic choroiditis, probably resulting from an abnormal continuity between the external tissue and the uvea. The path of transmission is probably by way of the lymphatic spaces of the optic nerve.

The Use of Constitutional Remedies in the Treatment of Ear Disease. —Samuel Theobald, after a rather severe criticism on the statements of several well known authors on otology, who doubt the efficacy of internal medication, the writer states that with each succeeding year of practice he is led to believe more strongly in the value of certain forms of the internal administration of remedies. Mercury he places at the head of his list of remedies, and believes it to be the remedy *par excellence* for not only tympanic affections, but for those of the internal ear as well. The bin-iodide is preferred, unless there be some susceptibility to the use of iodine. In these cases he employed the bichloride. In catarrh of the middle ear, both dry and moist, he thinks it to be exceedingly useful. No cases are given to support his statements, but may be forthcoming later, when the article is finished.

The Use of Boracic Acid and Calendula in the Treatment of Ear Disease. —At a meeting of the Materia Medica Society of New York, Dr. Sexton read a paper containing the results obtained by him in the treatment of ear disease by the use of boracic acid in connection with calendula. In preparing the mixture the calendula is first evaporated to a pasty constituency on a water-bath. One half of an equal amount of boracic acid is then added, and after evaporating this to dryness, the balance of the boracic acid is added, and the mass triturated. Dr. Sexton speaks very highly of its use in suppurative ortitis media and other affections of the ear accompanied by purulent and offensive discharge. It may be introduced either through a speculum or by the aid of a powder-blower.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, June 7th, 1881.

VAGINAL CYST.

In connection with the history of a specimen of vaginal cyst (reported in full in the October, 1881, number), Dr. Robert Watts said that two years ago he reported a somewhat similar case. The cyst in that instance was very large and had been developing for six years. It contained ten ounces of fluid, having a yellowish color and a sirupy consistence, contained a large amount of cholesterin and some granular matter, and the wall was lined with a cylindrical epithelium. He attempted to enucleate it, but failed, and then undertook to clip away the cyst-wall, and succeeded in removing all but the upper part, where it seemed to extend into the

peritoneal cavity, although he failed to detect any communication by means of a probe. In that case the wound all healed except at the extreme upper portion, where a small fistulous opening remained at the time the patient was discharged from the hospital.

FECAL TUMOR DIAGNOSTICATED TO BE OVARIAN.

Dr. J. B. Hunter presented a specimen, with the following history: A married woman, æt. 25, who was the mother of one child, and had had one miscarriage, six weeks previously, was admitted to the Woman's Hospital. Since the miscarriage she had noticed a certain amount of abdominal enlargement, and, on examination a tumor was detected in the lower part of the abdomen. Fluctuation was distinct, and there was apparently a cyst of considerable size. Dr. Hunter had no doubt that it was an ovarian cyst. The woman, however, had phthisis, and her general condition was bad, with high temperature, emaciation, etc., and he declined to operate. The patient was, therefore, sent to the New York Hospital, where she was admitted on the 9th, and died on the 18th of April. At the autopsy, the small intestine was found adherent every where, and, with the stomach, was crowded upward by a sac below, which had been formed in a mass of plastic exudation, contained fluid and a large quantity of fecal matter, and communicated with the small intestine by an opening as large as a goose-quill. The cecum and colon were in their normal position. The large intestine contained tubercular masses. There were tubercular masses in the lungs also, and abundance of old pleuritic adhesions. The stomach and duodenum were normal. The uterus was larger than normal, and was almost completely surrounded by the cyst. The ovaries were somewhat compressed, but easily seen on each side of the uterus.

Dr. T. A. Emmet remarked that the case exemplified the difficulty which sometimes existed in making a correct diagnosis. He thought that resonance on percussion in front would give rise to the suspicion of a renal rather than ovarian cyst.

Dr. Hunter remarked that he supposed there was a coil of intestine about the cyst, which gave rise to the resonance.

Dr. Emmet said that such a condition of things might exist. It was not the rule, however, to get resonance in front in connection with an ovarian cyst.

CYST OF THE LABIUM.

Dr. J. B. Hunter narrated a case in which he had to deal with a tense cyst, on the left labium, which had been troubling the patient for three or four years. It had been tapped several times, but had filled again. He opened it, and found that it contained a dark, grumous, glairy fluid.

With difficulty he succeeded in dissecting out the cyst, and was obliged to ligate several vessels of considerable size during the operation, but was unable to check the hemorrhage in that way, and had to pass a suture beneath the cavity made by excavating the cyst, and thus compress the bleeding surface. He had not usually found such cysts to contain anything except clear fluid. The tumor gave the patient no inconvenience except by its size.

Dr. Emmet remarked that labial cysts sometimes extended upward a very great distance, and described one which went so far under the ramus of the pubes that he was unable to remove it wholly. He had had two such cases, in both of which the cyst was situated in the left labium, and it was impossible to follow them to their termination.

Dr. Hunter remarked that in his case the cyst extended upward and downward much farther than was anticipated, and consequently it was very difficult to remove it.

Dr. Emmet said that he had not treated these cysts satisfactorily except by extirpation. If tapped, they were apt to refill; to suppurate, if injected; and, if packed, a slough was liable to be produced. The only way to arrest the hemorrhage and get union by first intention in a great part of the wound was to introduce deep sutures.

Dr. Byrne said that he had treated a similar cyst by introducing a trocar into the lower edge, and, after removing its contents, pushing the instrument through the upper end, and then inserting half a dozen threads of silk, tying the ends, and drawing a fresh portion of the silk into the cyst every day, after it had been wet with the tincture of iodine. During the first week, there was considerable suppuration, which appeared at the lower opening, but the cyst had healed entirely, and the silk had been removed.

Dr. Emmet said that one difficulty was, that the tissue covering these cysts was so thin that exciting inflammation within the cyst was liable to be followed by sloughing. He had had that accident occur where he had emptied the cyst and stuffed the cavity with lint.

Stated Meeting, October 4th, 1881.

SEPTICÆMIA—ABSCESS IN THE FALLOPIAN TUBE.

Dr. H. F. Walker narrated a case as follows: A colored woman, æt. 28, and a widow, entered his service at Bellevue Hospital, suffering from a high fever which had existed for four or five days, and was accompanied with a purulent sanguinolent vaginal discharge, very offensive in character. Her temperature was 103° and rose to 104° F. Vaginal touch showed that the uterus was freely movable, and was abo·

the size ordinarily met with at the third month of pregnancy. The patient denied the possibility of pregnancy. He regarded it as a case of septic poisoning from some cause, although not well made out, and patient was placed upon treatment appropriate for such a condition. Kibbe's cot was used and her temperature was reduced. Feeling almost sure that the patient's condition depended upon something within the uterine cavity, he introduced a tupelo-tent, and dilated the cervical canal sufficiently to allow the introduction of the curette which was used gently, but it brought away nothing. The patient went through the ordinary history of septicæmia: a continuous elevation of temperature with variations such as occur with septicæmia, and accompanied with sweating. A certain amount of bronchitis developed, but that which most diminished the patient's strength was persistent vomiting and diarrhœa. At the autopsy there was found an abscess in the right Fallopian tube which contained about two ounces of extremely fetid pus. This was probably the cause of the sanguinolent offensive vaginal discharge, and doubtless was the source also of the septicæmia. There was no peritonitis. The uterus was enlarged by the existence of mural fibroids. There were small abscesses in the liver and also in the kidneys.

Dr. Jacobi remarked that it would be interesting to know whether the abscess found at autopsy was old or one of recent formation.

Dr. Walker replied that that could not be positively determined. However, the Fallopian tube was not very much thickened, and there were no indications that the abscess was a chronic one. The patient had complained of slight pain in the lower part of the abdomen, and there was a moderate amount of tenderness, but these symptoms were about equal upon both sides of the uterus.

DRAINAGE AFTER OVARIOTOMY.

Dr. C. S. Ward narrated a case as follows: On the ninth of July, 1881, assisted by Dr. Walker, he removed an ovarian tumor from a woman, 38 years of age. The tumor had existed for about six months and had enlarged the abdomen to nearly the ordinary size at the eighth month of pregnancy. By conjoined manipulation it was determined that the tumor was attached to the uterus. After making the abdominal incision, it was found that there were but few adhesions, and those could be easily overcome. The tumor contained an opalescent, but not very thick fluid, and it was found that it sprang from the left border of the fundus of the uterus. A double ligature was passed through that portion which was attached to the fundus, tied, and the tumor was removed. The edges of the opening made in the peritoneal covering of the uterus were united with suture. The patient did well until the beginning of

the fourth day, her temperature not rising above 100° F., and the pulse ranging from 76 to 90. On the latter part of the third day, her temperature began to rise, and on the beginning of the fourth day it had reached 103 3-5° F. Evidence of beginning septic absorption seemed apparent, as manifested by the sudden rise of temperature. There was no pain or other symptom of peritonitis. Dr. Ward, after consultation with Dr. Walker, determined to remove the sutures in the abdominal incision, and after doing so, found a collection of fluid in the peritoneal cavity. The reason why he did not use a drainage tube at first was because there was no fluid whatever in the peritoneal cavity when he was ready to close the abdominal incision, and the parts appeared to be in a condition not likely to give rise to fluid collection, and under the circumstances he thought that it would complicate the case. In that opinion Dr. Walker concurred. On the fourth day, Dr. Ward removed these abdominal sutures, and at that early date found much trouble in getting through the peritoneum, and the intestinal agglutinations, but he finally succeeded in passing his index finger behind the uterus where a collection of an ounce and a half of decomposing fluid was found and exit given to it. He then introduced Dr. Thomas' glass drainage tube, and syringed out the cavity. The patient's temperature soon fell to 99° F., her pulse to 100, and her general condition was soon markedly improved. She was placed upon a Kibbe's cot, and douched every time the temperature rose, until finally it remained at nearly the normal degree. The patient did very well until the eleventh day, when, during the absence of the nurse, she got out of bed, walked to a mirror, removed the bandage, inspected the abdominal wound and walked out into the hall. In the evening, after making this exertion, Dr. Ward found his patient greatly prostated, and it seemed as though she would die from exhaustion. Stimulants were used freely hypodermically, artificial heat was applied, and in the morning reaction was fairly established. Two days afterwards she had a chill, and he supposed that a mural abscess was forming which finally opened and discharged for some time. He then removed the drainage tub and used a catheter, introduced into Douglas' cul-de-sac for the purpose of syringing and keeping the cavity clean. On last Friday, the eighty-third day, two sutures originally included in the pedicle were discharged through the opening where the drainage tube was inserted.

After the 14th of August, the patient washed out her abdominal cavity daily with carbolized water, by means of a Davidson's syringe. At the end of two months, she had recovered so as to be able to work in her regular occupation.

Dr. Ward felt sure that, had not the sutures been removed, and the peritoneal cavity washed out thoroughly, his patient would have died of septicæmia within forty-eight hours from the initial symptoms.

THE REDUCTION OF TEMPERATURE BY COLD BATHING ON KIBBE'S COT.

Dr. Lusk, with reference to the use of Kibbe's cot in private practice, narrated the following case:

A patient in the Maternity Hospital developed high fever, and he directed that she be removed to a special ward. Her temperature rose to 107° F., and he told the house physician to place the patient upon a Kibbe's cot, and see if the temperature could be controlled in that manner. The chances of keeping the patient alive seemed to be very slight. The temperature, however, was quite readily reduced, and, after using the cot for a week, erysipelas appeared upon the genitals, and extended over the body as high as the umbilicus. This complication was so serious that it seemed as though all the good that had been done was now undone, but, by the persistent use of the cot, the temperature was controlled, and the patient ultimately recovered entirely. Of course, other treatment was used, and large quantities of stimulants were administered, but the recovery seemed to be due largely to the happy success in lowering the temperature by the aid of the cot. The water used was of a temperature between 80° to 90° F., and the patient's temperature was steadily kept between 100° and 102° F. The unexpected result in that case had encouraged him to try to use the cot hereafter in private practice.

Dr. Hunter had employed the Kibbe cot in private practice, and, in one case, where there was great prejudice against the use of water in this manner, the patient was placed upon the cot, and tepid water, 75° to 80° F., was used first, and gradually cooled to 60° F. In that way, the prejudice of the friends was overcome, and he was able to keep the patient's temperature down to 99° F. without difficulty. He was sure that no amount of sponging could have reduced the temperature in the case referred to, and, in general, he had found it to be the most effectual means that could be employed.

Dr. Ward thought there would be no difficulty in introducing the cot into private practice, if it was so arranged, as it could be, that the patient was thoroughly douched, and, at the same time, the parts of the body, desired to be kept dry, remained untouched by the water.—*Monthly Supplement to Am. Jour. of Obstetrics*, Feb. 1882.

BOOKS AND PAMPHLETS RECEIVED.

A Practical Point in the Mechanical Treatment of Hip Disease. By A. B. Judson, M. D., Reprint from *Medical Gazette*, December 10, 1881.

Anæsthetics Medico-Legally Considered. By J. G. Johnson, M. D., Brooklyn, N. Y. Reprint from *Bulletin of the Medico-Legal Society of New York.* Vol. IV, Nos. 7 and 8, May–December, 1881.

The Skin in Health and Disease. With treatment, classification, and notes on Diet and Hygiene. By L. Duncan Bulkley. Philadelphia: Presley Blakiston, 1881.

Missouri Valley Medical Journal, Vol. 1, No. 1, January, 1882. Drs. W. C. Boteler and F. C. Hoyt, Editors. Published by John Combe: St. Joseph, Mo. Subscription $2.50 per annum.

Announcement of the Dental Department of the Uuiversity of California for its First Session of 1882.

Transactions of the Twenty-eighth Annual Meeting of the Medical Society of the State of North Carolina, Held at Asheville, N. C.

Annual Report of the Supervising Surgeon-General of the Marine-Hospital Service of the United States for the Fiscal Year 1881. Washington: Government Printing Office.

Trance, aud Muscle-Reading and Allied Nervous Phenomena in Europe and America. With a letter on the moral character of Trance subjects, and a defense of Dr. Charcot. By Geo. M. Beard, A. M., M. D. New York: 1882.

Fifth Annual Report of the Superintendent of the Yellowstone National Park. By P. W. Norris, Superintendent. Washington: Government Printing Office, 1881.

☞ All exchanges and works for review should be addressed ROCKY MOUNTAIN MEDICAL TIMES, P. O. Box, 1593, Denver, Colo.

DENVER, COLO.—MORTUARY REPORT, JANUARY, 1882.

Abcess	1	Meningitis	3
Accident	2	Nephritis	1
Alcoholism	1	Old Age	1
Brain Disease	3	Paralysis	1
Bright's Disease	2	Pericarditis	1
Bronchitis	3	Peritonitis	1
Cerebro-Spinal Meningitis	2	Pneumonia	16
Consumption	17	Pyæmia	1
Croup	2	Scarlet Fever	3
Debility	1	Spina Bifida	1
Diphtheria	1	Still-born	3
Enteritis	4	Stricture of Œsophagus	1
Gastritis	1	Typhoid Fever	5
Heart Disease	1	Ulceration of Bowels	1
Hepatitis	1	Uræmia	1
Hydrocephalus	1		
Inanition	1	TOTAL	84

Mortality for month of January, 1882, equals 1.40 per thousand.

Report includes four hospitals.

Estimated population, 60,000.

W. W. ANDERSON, M. D., City Physician.

METEOROLOGICAL REPORT FOR JANUARY, 1882.

Monthly Mean Barometer	24.624
Highest Barometer, on the 21st inst	25.034
Lowest Barometer, on the 25th inst	24.194
Monthly Range of Temperature	8.40
Monthly Mean Temperature	29.7°
Highest Temperature, 1st	67.0°
Lowest Temperature, 13th	1.2°
Monthly Mean Dew Point	14.9°
Monthly Mean Humidity, per cent	56.8
Maximum Velocity of Wind and Direction, Miles, S	32
Number of Clear Days	20
Number of Fair Days	10
Number of Cloudy Days	1
Total number of Days on which Rain or snow fell	7
Total Rain and Melted Snow, inches	0.57

G. M. NEAL, Serg't Signal Corps, U. S. A.

THE
ROCKY MOUNTAIN
MEDICAL TIMES.
A MONTHLY JOURNAL OF
MEDICAL, SURGICAL AND OBSTETRICAL SCENCE.

APRIL, 1882.

THE FULCRUM ACTION OF CONTRACTED LIGAMENTS AS AN OBSTACLE TO THE EXTENSION TREATMENT OF JOINT DISEASES.

By Edmund Andrews, A. M., M. D.,

PROFESSOR OF CLINICAL SURGERY IN CHICAGO MEDICAL COLLEGE, SENIOR SURGEON OF MERCY HOSPITAL, ETC.

All the great modern improvements in the treatment of joint diseases consist in appliances to prevent friction and pressure of the inflamed joint surfaces upon each other. The various methods of extension used for this purpose are familiar now to the whole profession; but there are certain cases where the physician is puzzled and astonished to find that his extension does not produce the customary relief, but instead aggravates the pain and increases the inflammation. The reason is simple enough in itself, but still so far concealed by circumstances, as to elude the comprehension of many excellent practitioners.

If, however, we take up the knee joint first, we shall find the obstacle quite easy to understand, and not difficult to remedy. Simple non-rheumatic inflammations of the joints are always benefited by extension if made in the right direction. Now, an inflamed knee is usually instinctively flexed by the patient, because he thus shifts the pressure of the tibia to a new and less inflamed part of the condyles, and relieves some of the pain. By constant adherence to this position, the posterior parts of the inflamed capsular ligament undergo shortening, and the relaxed flexor muscles become contracted; so that it is often impossible to straighten the limb.

If now the surgeon applies a weight and pulley, or any other mode of extension, he produces great pain and seriously exasperates the inflammation. The explanation in this case is so simple as to scarcely require

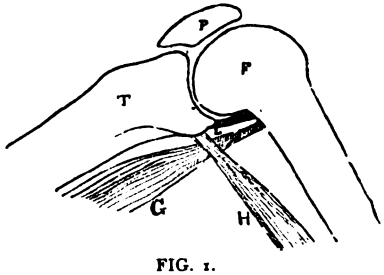
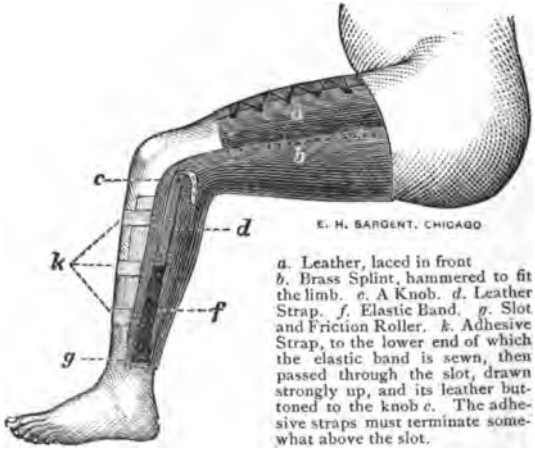


FIG. 1.

notice. In Fig. 1, F is the femur, T the tibia, and L the posterior part of the capsular ligament; H represents the direction of the contracted hamstring tendons, and G that of the gastrocnemius muscle. All these parts having become rigidly contracted, they resist any efforts to extend the joint. If, however, the effort is made by the surgeon, by pulling on the leg below, whether with the hand, weight or pulley, or by Sayre's two-ring knee-stretch, the attachments of the ligaments and muscles become a sort of fixed point or fulcrum, and the effort at extension instead of diminishing the pressure of the joint surfaces on each other, actually does

FIG. 2.



a. Leather, laced in front *b*. Brass Splint, hammered to fit the limb. *c*. A Knob. *d*. Leather Strap. *f*. Elastic Band. *g*. Slot and Friction Roller. *k*. Adhesive Strap, to the lower end of which the elastic band is sewn, then passed through the slot, drawn strongly up, and its leather buttoned to the knob *c*. The adhesive straps must terminate somewhat above the slot.

the opposite. The extension force acts upon the tibia as upon the long arm of a lever; the shortened posterior ligament L becomes the real center of motion or fulcrum on which the bone is hinged, so that every effort at extension only pries the articular surfaces with great and injurious violence against each other.

On this account a well known surgical author asserts that an extension brace cannot be used on a bent knee, but that the joint must first be straightened. Simple as this matter is, it has baffled many a practitioner besides the author in question. There is, however no real difficulty. If it is desired to commence the treatment by extension for two or three weeks in bed, all that is necessary to overcome the obstacle is to place the bent knee over a double inclined plane, or even on a pyramid of cushions. If now the adhesive plasters be applied to the leg, and the pulley and weight placed so that the string will draw in the direction of the axis of the tibia, the whole difficulty vanishes, and the patient experiences the same relief that he would if the limb were straight. When the inflammation has somewhat abated, the inclined plane can be slowly straigtened, bringing down the joint with it. When it is desired to apply an extension brace to a bent knee, it can readily be accomplished as follows: A concave brass splint is hammered to fit the posterior half of the limb from the nates nearly to the ankle. The splint is completed in front of the thigh by two pieces of leather, which are laced up. If necessary this brace can be made with a joint, so as gradually to be straightened during the treatment. The patient of course must go upon crutches, and not step on the foot at all until the inflammation is cured. If the limb is already straight, a simple apparatus like the following is thoroughly effective, and much more convenient than the two-ring apparatus of Sayre's. The upper part is simply the frustum of a cone made of thick leather and fitted to the taper of the thigh. It is laced in front. On each side is a steel rod running down nearly to the ankle. Opposite the knee is a button knob on each rod, and at the lower end of each is a flat space with a transverse slot, having a simple friction roller on its upper border. The adhesive plasters being applied to the leg, a strong elastic webbing is sewed to the lower end of the adhesive plasters two inches above the slot. The elastic webbings go down to the slots, pass out through them and then turning upward, across the friction rollers, they are drawn tight and buttoned to the knobs above, thus making a steady and painless extension.

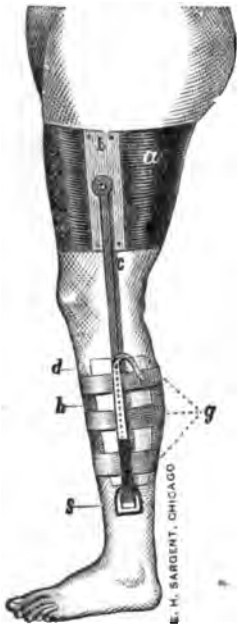


FIG. 3.

a. Leather, laced in front. *b*. Steel Plate, riveted to each side. *ç*. Rod, terminating in slot *s*. A similar rod is on other side of limb. *s*. Slot, with a friction roller. *g*. Adhesive Straps, to the lower end of which an elastic band is sewn. *h*. Elastic Band, terminating in a leather strap, which is passed through the slot *s* and turned up, and, being strongly stretched, is buttoned to a knob, *d*.

In the hip joint, the fulcrum action of contracted muscles and ligaments is a little more complex than in the knee, and therefore more frequently misunderstood. In a large portion of cases of hip disease. the thigh is both flexed and adducted, but for convenience we will consider these two positions separately. In adduction the contracted adductor muscle M becomes the fulcrum assisted by the shortened internal part of the capsular ligament. It is obvious now, that any attempt to abduct the limb will be resisted by the fulcrum of the adductor muscles, and will simply result in prying the head of the bone with greater violence into the inflamed acetabulum. If extension is attempted in bed by the weight and pulley, when the adduction is strong and unyielding, it produces the following mischievous results: The pelvis of the patient rests in bed on the bulge of the sacrum, and is easily turned this way or that. The traction on the affected limb although made in the line of the body, pulls that side of the pelvis downward, turning it on the pivot of the sacral bulge, and producing real abduction. The abduction is resisted by the rigid adductor, which becomes a fulcrum, so that the result is to pry the head of the femur forcibly into the inflamed socket and thus greatly increase the pain. Hence, a portion of these cases cannot be treated by the preliminary bed extension, except by modifying the plan. I sometimes evade the difficulty temporarily as follows: If the two limbs are both fixed over a double inclined plane of suitable size, the weight of the body acts as an extending force down the proximal slope of the apparatus. If now the sound limb be raised higher than its fellow, by cushions under the bend of the knee, the pelvis will hang obliquely, the affected side will have its thigh adducted and the weight of the pelvis will effect traction on the joint without pain. However, this plan is not very convenient, and I only use it temporarily, while having a brace constructed, which will pull painlessly in any direction assumed by the diseased limb.

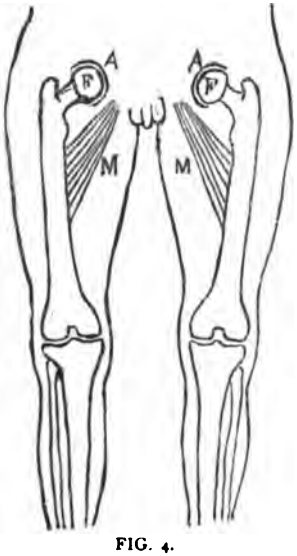


FIG. 4.

When the affected thigh is flexed on the pelvis long enough to produce contraction, the vicious fulcrum consists of the great anterior ligament of the hip joint, (the Y ligament of Bigelow,) aided by the *psoas magnus*, the *iliacus*, and the *tensor vaginæ femoris* muscles, as shown

in this cut. In attempting to extend the limb, if these parts have become rigid, they constitute a fulcrum, and any attempt to bring down the limb only pries the head of the femur forcibly into the socket.

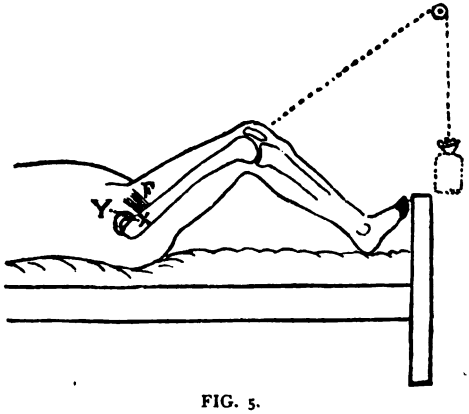


FIG. 5.
F. The tendons of the flexors.
Y. X. The direction of the great Y ligament.

If the flexion is not accompanied with adduction, bed extension can still be made over a double inclined plane, assisted by a weight and pulley attached as usual by adhesive plasters, and drawing in the direction spontaneously assumed by the limb. The dotted line in the cut shows this part of the appliance.

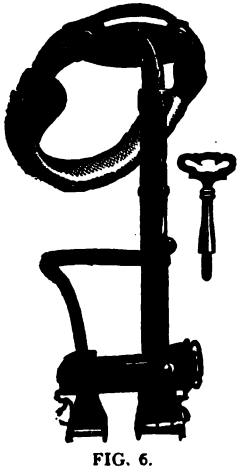


FIG. 6.

Generally, however, if the case does not admit of bed extension in a line with the body, I put on a hip splint at once, capable of drawing painlessly in any direction which the thigh may assume.

All the hip splints in general use are modifications of the one invented by Dr. Henry Davis. The following is Sayre's modification. It has a knee plate attached to the limb by adhesive plasters below, and a hip pad above, retained by a perineal band for counter-extension. These are connected by a ratchet-bar, worked by a pinion on a key, for effecting the extension in length. It is an objection to this apparatus, that the rack and pinion is rather expensive, and very difficult of construction by mechanics not provided with all the facilities found in large cities. It is also disposed to get out of order and work badly when partly worn out. For these reasons I have devised the following modification and find it much more satisfactory: (Fig. 7.)

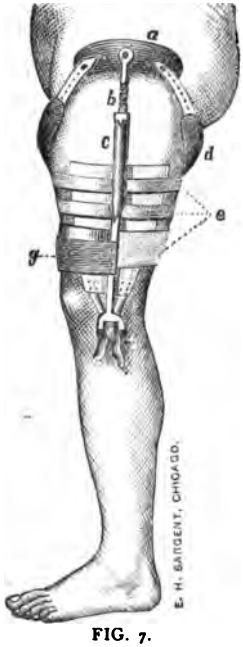


FIG. 7.

a. Top Pad, applied just below crest of ilium. *b*. Screw, sliding in Tube *c* and regulated by a nut. *d*. Perineal Band. *g*. Half Band of Steel in front of thigh. *e*. Adhesive Straps, fastened to lower end of instrument, both sides of the thigh, by tapes.

The top part has button knobs which are more convenient than buckles. Jointed to the pad is a screw running loosely in the tube *c*. A steel band *g* crosses the front half of the limb and carries below it a short rod on each side of the knee having a hole in the lower end. Adhesive plasters being applied, double tapes are sewn to their lower border on each side of the limb, and these tapes are tied through the holes in the bottom rods. No key or wrench is used, as the force required is not great. The surgeon takes the tube in one hand, and the screw in the other, and draws them out with the requisite force, and fixes the position by turning the loose nut down on the screw with a movement of the thumb, until it touches the tube. The nut has a small tooth beneath, which prevents it from being turned spontaneously by the movements of the tube.

This apparatus make extension in any direction which the limb may chance to assume, and thus entirely evades the fulcrum action of contracted tissues. The patient should walk exclusively on crutches, if not too young, and not put the foot to the ground.

No 6 Sixteenth Street, Chicago.

EARLY CEREBRAL SYPHILIS—TERTIARY MANIFESTATIONS DURING THE EARLY SECONDARY STAGE.—HEMIPLEGIA.—COMA.—DEATH.

By Dr. Milo A. Wilson, M. D., Denver.

Mr. Y., æt. 27, contracted syphilis the latter part of August, 1879. This was followed by inguinal glandular swelling, macular and papular eruptions, sore throat, osteocopic pains (legs chiefly), buccal mucous patches. About the holidays, 1879, he was feverish and weak, but his appetite was good, generally, nor did he have any headache, eye disease, falling of hair nor anal mucous patches. Early in September,

1879, he began treatment with Dr. ——, who frequently said he never used either mercury, or potass. iodid. in treating this disease; he cauterized the sore on Mr. Y.'s penis every three or four days, for over five months, or until the time he first called upon me, which was February 10th, 1880, prescribing also internally some vegetable preparations.

At the time of his first visit to me there was an ulcer, dorsal, single, just back of the corona glandis; its appearance was that of one very frequently cauterized with nitrate of silver, a thick, white or grey, hard tissue covering it; it was deep, indurated, perfectly indolent, lifeless. The inguinal glands were somewhat enlarged. Sparsely scattered, over the body and face, there were maculæ and papulæ; both tonsils were sub-acutely inflamed, a sulcus in each gland. He complained of pains throughout his limbs and joints of a fleeting character, not very severe; there was no emaciation, appetite and digestion were fair, bowels constipated. No other lesions present. He called upon me regularly every four to six days until the ulcer was healed, which process was accomplished in about eighteen days by the applications of mercurial, zinc and silver, ointments and washes; cauterization was not once employed. At his first visit I prescribed hydrarg. bichlor. internally, gr. 1-16, three times daily; this dose was changed during treatment to gr. 1-24, 1-32, also for convenience sake, pills, containing either hydrarg. bin-iod., gr. 1-16, or hydrarg. protiodid., gr. 1-4, 1-6, with ext. belladonna, gr. 1-6; for a long time I gave him a tonic mixture consisting of liq. hydrarg. per-chlor. (O. B. P.) tinct. ferri mur., infus. quassia or calumba.

There being no special indication whatever for the employment of potass. iodid., I did not, up to June 6th, order it but two or three times, ten to twenty grain doses, chiefly for its diuretic, more than its specific action.

The case proceeded smoothly, he felt perfectly well, until May 27th he called upon me in much different condition, three months and a half after his first visit. The condition just referred to was very similar to that which we so often see in chronic malarial poisoning, "dumb ague." He had been "chilly" a good deal, with more or less fever, no sweating, sharp headache, pain in the back, soreness of the muscles, anorexia, debility, etc., but without periodicity. After carefully considering the possibilities of several other diseases, I concluded this to be a return of an old ague the patient had suffered from years ago, in the East, and accordingly prescribed, as I usually do in such cases, more especially if the attack be the first one. The following plan will "break it up" at once and permanently:

On the day of the chill, give, during the sweating stage, fifteen to twenty grains of quinine; then (tertian type) on the 3rd day, *anticipate*

the expected chill by four to five hours, with a dose of ten to fifteen grains of the same, according to sex, constitution, age, etc.; also, to take during these three days, a mixture giving two and a half grains of quinine every three or four hours, in acid. sulph. (dil. or aromat.) syrup and water; all this preferably to be preceded by a cathartic. Quinine, fifty-five to sixty-five grains in all, the disease cured in three days. (Vide article I published in the *New York Medical Record* for December 4th, 1875, page 806.)

But this anti-malarial treatment did not entirely relieve Mr. Y. It allayed the pains and soreness of his body, diminished the fever, but the headache, anorexia and debility continued; the specific medication was stopped at the visit just mentioned (May 27th), for the reason that he seemed so prostrated and "sick," that I feared mercury and especially iodide of potassium would depress him more, besides this attack was supposed to be malarial in nature. Thinking now that his strength and appetite would return with the use of acids (mineral), vegetable bitters and infusions, I employed them; also ordering for the headache, sleeplessness, etc., a well-tested, original and favorite combination of mine, as follows:

R.	Chloral Hydrat. - - -	IV drachms.
	Codeiae. - - - - -	III grains.
	Sodii Bromid. - - -	IV drachms.
	Tinct. Digitalis - - - -	II drachms.
	Syr. Aurant. Cort. - - -	I ounce.
	Aquæ Aurant. Flor. q. s. ad - -	III ounces.

M. Sig.—Two teaspoonfuls every 3 to 5 hours, as necessary.

Any other syrup and water, according to fancy. This mixture will quiet the nervous system, relieve pain, produce sleep, when morphia or other narcotics fail, or should not be employed. I have used it for years, and the tinct. digitalis (which I *always* prescribe with chloral), renders it comparatively safe. Our patient seemed now for a few days to improve; his nights much better, appetite returning. His next call was upon June 6th, and his condition then, perplexed and alarmed me. His pulse was but 56, (his natural pulse 72) full, no fever; face thin, drawn, and of an ugly, ashy, grayish hue; pupils dilated, conjunctivæ injected, sensitive to light; mentally dull, sluggish, though he talked perfectly rationally, but slowly; he was very weak, slid away down in the rocking-chair upon which he sat, seemed to spread out or "flop" his long legs about on the floor, although he had normal control over them. He complained greatly of the head pain, weakness, said he thought he was going crazy, (it struck me so too), wanted to sleep all the time.

This sleepiness was not due to the chloral mixture as he had not taken any of it for several days, was "too sleepy without it."

This pain in the head was not, nor never had been, strictly localized; it was felt, however, chiefly upon the left side, anteriorly, sometimes at any other point of the cranium; there was neither tenderness nor pain upon firm pressure, of any of the cranial bones; the pain was usually worse at night, still, he suffered greatly in the mornings or afternoons; it was not always distinctly a pain, proper, but a dull, heavy, strange, uncomfortable sensation, a "misery"; no paralysis of either the ocular, or any other nerves or muscles, nor diplopia.

The difficulty now seemed undoubtedly to be (to my mind), passive cerebral congestion; whether syphilitic in character, or as a result of his very fatiguing occupation for many months, it was impossible at the time to decide. He was an official on the R. R. between Denver and A——, a distance of 280 miles, and was in either place every other day; he often complained of this severe work. I frequently suggested the advisability of other occupation, but he continued the same until he had to cease. At this visit I prescribed sod. brom., digitalis, ergot, in case this congestion was of the "simple" form; this to be assisted by hot mustard-salt pediluviæ several times daily, milk (whisky) punch, beef-tea or animal broths, bowels to be kept soluble, head kept elevated, etc.

That he might have the advantage of specific medication should *syphilis* be the cause, I prescribed, *also*, hydrarg. bin-iod. gr. 1-12, potass. iodid. scruple 1, ter in die. For the next three days he felt much better, even sending me word it was unnecessary for me to call upon him. June 9th, three days afterward, he came in person; pulse 60 and seemed stronger, pupils still dilated; he was in good spirits, complained only of his head. Although this pain was not typically syphilitic in kind, I have so often had good results in its treatment, from much *larger* doses of the iodide, that I ordered a separate saturated solution of it, each drop a grain of the salt.

R. Potass. Iodid. - - - - 1 ounce.
Aquæ Dest. q. s. ad - - - f. 1 ounce.

M. Sig.—To commence with twenty minims, increasing by ten each dose, in half a goblet of water, three times daily, after meals.

The prescription I take from Keyes' work. It must be *correctly* prepared.

Pills of hydrarg. protiodid. gr. 1-4 each, were now substituted for the bichloride. Other treatment continued.

Two days afterwards, on the afternoon of the 11th, his room-mate called, stating that Mr. Y.'s "left hand and arm seemed to be weak."

Visiting him at once, I found a slight loss of both motion and sensation, the grip of his left hand quite feeble; as compared with that of his right. No paresis of any other muscles, his condition otherwise about same as before, excepting that he did not complain nearly so much of the head, whether from relief afforded by the remedies, or the usual sleepiness was doubtful. This paresis had come on gradually, he was scarcely aware of its existence although he had not lost consciousness at any time; was in normal condition, mentally. I continued the same remedies; he had reached the dose of ninety grains iodide of potassium, the pills were causing slight intestinal pains. Apart from this specific medication, he was receiving digitalis and ergot for obvious reasons; the sodium bromide was kept up to quiet the nerve-centres, perhaps prevent convulsions. Strychnia, hypodermically, was thought of but not employed until next day; a laxative was ordered, also a stimulating liniment for the left arm.

At ten o'clock following morning I found him alone lying in bed (undressed), upon his left side, knees and thighs drawn up against abdomen, head and chin drawn down to sternum.

He was surrounded by very offensive vomit, was semi-comatose, could not be roused to do more than grunt, did not raise his eye-lids, did not seem to be conscious of my presence in the slightest.

His left extremities were now both paralyzed, pulse and pupils the same, respiration very slow (8), deep, regular, not at all noisy, stertorous or shallow; he could not open his mouth, move his tongue, nor swallow; eyes congested, right one watery; bowels had not moved, urine had passed. His room-mate left him about seven that morning, feels certain he would have noticed anything wrong before leaving. This was Saturday, 12th inst., he died the following Friday, 18th inst. From 12th to 14th several of his friends insisted upon attending him, but on the 14th I engaged a professional nurse.

From 12th to 16th inst., the treatment was "*pushed*"; he received two drachms of the potassium iodide four times daily, either by stomach or rectum; the oleate of mercury (20 per cent.), first one-half, then one, one and a half, then two drachms, by inunction, three times daily.

Further, lest my diagnosis of cerebral syphilis should not be correct, full doses as indicated, of aromatic spirits and carbonate of ammonia, belladonna, digitalis, ergot, camphor, whiskey, beef-tea and blood, milk, raw eggs, almost everything (so long as there was no fever) that would increase the action of the heart, improve or assist respiration, relieve the intra cranial circulation. The pulse became as low as 44, respirations 4, temperature normal.

He was repeatedly rubbed, nearly the entire body, with a powerful liniment; feet and legs kept covered with flannels wrung out of hot mustard-salt water, his temples and mastoids blistered; stimulating enemata were occasionally employed and on the 15th inst. his hair was cut close, and croton oil liniment well rubbed into the vertex. His stomach and rectum behaved well, everything seemed to be retained, all the counter-irritants did their work. Up to the evening of the 16th inst. he certainly had improved greatly and all were encouraged; he, without doubt, knew me at each visit; occasionally, however, giving *my* name when others asked if he knew *them*; pupils still dilated, right eye became badly inflamed, pus formed; pulse by 16th inst. had reached 80, respirations 16, temperature always natural.

The left lower extremity became almost normal as to motion and sensation, the left arm was frequently moved as though voluntarily, although he would grasp nothing with that hand and sensation was imperfect. He never spoke a connected sentence, but could say single words, such as yes, no, Wilson, etc., in a thick, indistinct, slow way; his eyes were kept open mostly now, and would follow an object placed before them; still, he saw but indistinctly; seemed indifferent, or unconscious, of his condition and surroundings, "dazed" we might term it, and becoming quite irritable. During this last week of his life, or, rather, up to the 16th inst. P. M., it was quite common for him to "strike out," hit the walls or head-board with his clenched right fist, not in a violent way, but just gently strike these points for many minutes at a time, and he would become very angry, seemingly, if interfered with.

On the 13th inst. I invited my learned friend, Dr. W. H. Williams, of this city, to see this case with me. He considered all the movements above-mentioned as of a spasmodic, involuntary and very unfavorable character; thought the chances for recovery very slight, the case a most puzzling one to positively or definitely diagnosticate. He had no suggestions to make, whatever, by way of improving the treatment.

Wednesday evening, 16th inst., I found a pronounced change in our patient's condition; pulse had risen to 120, respirations to 24, temperature to 103°, the latter becoming as high as 104° before his death. During the next day, 17th, and up to time of death, 2 P. M, 18th inst., the pulse reached 160, respirations 52. He had no convulsions at at any time; these last two days he scarcely moved at all, kept the eyes closed; the pupils were still dilated, but slightly sensitive to light, right eye much inflamed, pus present. This may have been due partly to his occasionally rubbing it with the same hand (right) with which he scratched his head, upon which was the croton oil. The left hemiplegia returned more profoundly than ever, motion and sensation were entirely lost.

By no sign, word or indication, could I ascertain whether the pain in his head had changed any, was better or worse. During these last forty-eight hours feces and urine were passed involuntarily, a large bed-sore was forming over the sacrum. There was at all times more or less difficulty in swallowing, medicines and fluid food were given him successfully by means of a low, flat pitcher, with a small, long spout, which was forced between the jaws back of the molars.

At this visit all previous treatment was abandoned, and tinctures of aconite, gelsemium and cimifuga racemosa ordered, as also, 15 grains of quinine per rectum, twice daily; nutriment as before, cold to the head.

On Friday (last day) I employed, hypodermatically, strychnia in one forty-eighth of a grain doses, three times, "to sustain the heart and respiration." (Bartholow, Fothergill.)

The tinctures just mentioned were soon suspended, and nothing but a little milk, beef tea, water, administered.

He breathed his last, quietly, gently, at two o'clock P. M.

In concluding this clinical history will add that he had never been intemperate in his habits; there was at no time any form of delirium, or illusions, present; after May 27th there was also slight complaint of vertigo, speech thick, indistinct, memory unaffected; after date just mentioned he became gloomy, depressed, his features drawn, "pinched," but not expressionless. He was not at all irritable before June 12th.

The paralyzed muscles were rigid at first, afterwards relaxed. A strong light annoyed him, loud noises did not, although he seemed to hear pretty well; according to his room-mate "one of his ears ran" after the 12th inst.; this I did not observe.

It was my impression that the sense of taste was abolished; still, as to this and the sense of smell I feel uncertain.

He never vomited but once (12th June), there was no repetition of the chills, no muscular twitchings. An autopsy was, unfortunately, not permitted.

One or two points relative to this case occur to me as being important and of interest.

Had he received, during the first five months of his disease, when the eclectic treated him, before his call upon me, mercury, with or without iodine, would not, in all likelihood, the accession of such very severe brain syphilis have been prevented? I rather think that nearly all regular practitioners of the present day would answer this in the affirmative. In this case, there were *present* most of the usual symptoms of the early secondary stage, fairly well pronounced; when these are markedly *absent*, it is generally considered and acknowledged, I believe, that syphilis of the *nervous* system is much more to be expected and feared. Therefore

should this opinion be a correct one, this patient was on the safer side, and proper specific treatment during those earlier months, *might* have prevented such dire results.

Further, what symptoms, if any, were there present before or after the visit of May 27th, even up to the one of June 6th, positively indicating a necessity for the administration of iodine or its salts?

All authorities seem to have agreed, that, in the primary and secondary stages, iodine is unnecessary, unless there be present severe bone disease, or certain other lesions.

This question I consider an all-important one; for upon the diagnosis hangs the treatment, and in syphilis, usually, the prognosis. It is greatly through the correct and minute reporting of cases, whether fatal or not, that the profession can gradually become so thoroughly informed, that the forming of incorrect diagnoses will be exceptional, human life thereby being more frequently saved.

Possibly, had this patient been given large doses of one of the iodi satslc, on and after his visit of May 27th, he would now be better off; but, as I feel that I have had a very fair share of experience in the diagnosis and treatment, both of syphilis and malarial infection, and as, at the time, my decision was strongly in favor of the malarial aspect of the question, due consideration having been given it, it is probably not presumptious in me to say that many practitioners would have been led to the same decision and acted accordingly.

True, this patient had a "sharp headache," but it was not specially charteristic of syphilis; and, as this headache and the other symptoms mentioned as being observed at the visit of May 27th, are common enough in an attack of ague, and as, furthermore, it is common enough for persons who have suffered from any of the malarial fevers in the East to have a renewal or attack of the same, after a longer or shorter sojourn in Colorado, it cannot with justice be said, it seems to me, that, under the circumstances, because he had a sharp headache, he should at once have had the iodide of potassium. The diagnosis must be "gotten down to finer points" than that.

Besides, as a matter of fact, iodide of potassium *had* been employed, irregularly however, previous to June 6th; after that date, and June 9th, twelve days before death, it was given in doses sufficiently large and frequent to have cured him, had it then been possible to have done so.

As to the pathological changes and morbid processes which were taking place, about the time of, and after May 27th until death, we can not much more than surmise as to this or that, no post-mortem having been held.

Just what was the precise form of brain lesion existing at the date just mentioned, again upon June 6th and 12th, finally and especially on and after the evening of the 16th inst., it would be exceedingly instructive and interesting to know.

Most physicians, I presume, while treating the more serious diseases, form some opinion relative to the morbid changes which may be going on in this or that disease. Mine, in this case would not likely be so instructive to the student, as it would be for him to carefully study the chapters on syphilis of the brain, cerebral vessels, prodromal period of nervous syphilis, etc., now to be found in the last editions of several of our own (American) masterly works on the subject, to say nothing of foreign works.

Having had a great interest in this case for private reasons, and somewhat puzzled by its terminating fatally, I desired to have the opinion of certain physicians in the East, whom I know personally, well. A report of the case was therefore sent to three gentlemen very prominent in, and well-known to, the profession. They replied very kindly, but requested that their names be not mentioned in case of publication.

The request is a very proper and correct one, as they never saw the case, no post-mortem report was furnished them, and without these valuable aids, their opinions of course can only be hypothetical.

"My Dear Doctor:—

I do not doubt at all that the case you describe is one of syphiloma of the brain—the gummata being deposited in the middle fossa, and also at the hemispheres. In spite of all that may be done, and this case was certainly very heroically treated, a certain proportion of the cases die."

"Dear Doctor:—

My opinion about it is not valuable, because I did not see the case. It is a great shame that you could not get an autopsy. If your patient did not die of brain syphilis I do not know what killed him. The mistake in treatment, if any, was in not pushing iodides unsparingly, from the commencement of brain symptoms."

"Dear Doctor:—

After reading this case of yours, my opinion is, that the patient succumbed to cerebral syphilis. Without an autopsy it would be impossible to state its absolute nature more precisely; it may have been a case of precocious tertiary manifestation. I should think that meningitis played a part, and perhaps obliteration of cerebral arteries an addition in this case. It is not impossible to have the rapid appearance, of the ordinarily late manifestations."

COLOR-BLINDNESS.

A PAPER READ BEFORE THE DENVER MEDICAL ASSOCIATION.

By A. B. Kibbe, M. D.,

OPHTHALMIC SURGEON TO ST. LUKE'S HOSPITAL, DENVER.

While this peculiar defect in the vision of a certain per centage of the community has been known to exist for a century or more, it is only within the past ten years that any attention of consequence has been paid to its pecularities, causes or dangers. While much has been written by the various observers, such writings have been mostly confined to the pages of journals devoted to special subjects, and the general practitioner will rarely meet with any extended description of it in the short time which he is able to devote to the reading of medical periodicals. On this account, therefore, I propose this evening to present to you in a few words, the salient points in connection with its form, course, relative frequency and the dangers incident to its occurrence among certain of our laboring classes. From its very nature there is no doubt but that it has existed since man first made his appearance; and if we are to believe with Geiger that primitive man was blind to all colors, and that our present ability to distinguish detween the different hues of objects is due to advancement of civilization, we must then all the more accept the idea of its having always existed.

The theory advanced by Geiger had its foundation in the statement made by Gladstone in his work on Homer and the Homeric age, that there were numerous marked discrepancies between the colors of objects spoken of by Homer, and the appearance which these objects present to the eyes of the present generation. As an example of this he quotes from Homer a sentence comparing the color of the sea to wine. In this instance we see the mistake which one color-blind would be likely to make. This ingenious and certainly interesting theory had for some time many supporters, but later investigators have proven beyond doubt that no good and plausible foundation for such a theory exists. One great link in the chain of reason in support of Geiger's theory is the rarity of color-blindness among females, and which can only be accounted for on the ground of their greater use for color, by which they have arrived at their present state of perfection in the color sense. Though, as I have before stated, color-blindness must have always existed to a greater or less extent, it had

never been noticed by scientists until Dr. John Dalton, the celebrated author of the atomic theory, published a description of his own case, and in addition reported several others which had come under his observation. These cases were merely regarded at that time as curiosities, and no endeavor was made to ascertain the relative frequency or causes of its occurrence. The first to make any extended examination was Prof. George Wilson, of the University of Edinburgh. He was first led to suspect its existence from the mistakes make by certain of his pupils in estimating the color of precipitates. On examination he found that about one in eighteen was defective. He also called attention to the danger of color-blindness in occurring among seafaring men or railroad employes.

Kebeck, of Berlin, also examined a class of students and obtained about the same results as did Wilson. By this time the subject was beginning to agitate scientific circles, and examinations of large numbers soon followed. As a result it was found that the average percentage was about three, also that it was extremely rare among females. Three varieties were encountered corresponding to the three primary colors, red, green, and violet, and exist in the same order of frequency, violet blindness being very rare. Cases of complete color-blindness or achromatism were also found, such persons being unable to distinguish color at all, all objects appearing of a dull greyish hue. At the same time that examinations were going on to determine the average percentage, physiologists were busying themselves in determining its cause. As a rule it occurs independently of any diseased condition of the eye, but the investigations of Leber have shown that it is an almost constant accompaniment of atrophy of the optic nerve. Red blindness being the usual form met with in this condition. Injuries have also been known to cause it. A case is reported of a man falling from a house and receiving a severe injury to the head. On recovery he was found to be color-blind, vision otherwise being normal. Long continued use of the eyes in sorting colors, according to Lawson, may also give rise to color-blindness.

One peculiar and noticeable feature in connection with its cause, is that it is very frequently hereditary; thus, in a case which I saw in the East, son, father and grandfather were all red-blind. It was stated at the time that it was more frequent among Jews than among Christians. This idea, however, does not obtain at the present time.

While it is a fruitful subject for speculation, we as yet know nothing definite as to whether the color sense is located in the eye or in the brain. The usually accepted theory at present is that advanced by Young, and confirmed to a certain extent by Helmholtz. Young's theory was that there existed in the retina three sets of nerves corresponding to the three primary colors, one of which responded to the stimulus of red light,

another to that of green, while a third was acted upon by violet. The investigations of Helmholtz showed that while this was true to a certain extent, red light, for instance, stimulated not only the fibres sensitive to red, but to a much less extent the other two also, green light acted not only on the fibre responding to green, but in a less degree on those of red and violet, and violet light stimulated those elements transmitting both red and green in addition to those acted upon by violet.

The vision of persons who are color-blind carried out what we should expect from Young's and Helmholtz's theory, as will be seen when I come to speak of peculiarities of vision of such individuals. Phrenologists as well as many others whose opinions are of more value claim that the color-sense is located in the anterior cerebral convolutions, basing their theories to a certain extent on the fact that the brain of Dalton was found to be but little developed in this region. Subjective sensations of color are also referred to this locality. Though there are objections to be raised to both theories, that advanced by Young is by far the more plausible of the two; and in consequence is generally accepted. The mistakes made by persons color-blind is due to the fact that all hues are to them but combinations of two of the three primary colors, in consequence when colors differ by the mixture of red; for instance, a person red blind could not distinguish between them as there is no red in his system of color. The same would be true of green and violet to persons affected with green or violet blindness.

The vision of "color-blinds" as they are called, might, perhaps, be better illustrated by a description of the case of a gentlemen friend of mine who could not pick strawberries with any degree of enjoyment as he was unable to distinguish the berries from the leaves other than by their difference in shape. His son was also color-blind and unable to tell the difference between the red and green signals used on vessels. This was quite an inconvenience to him as he was an ardent lover of yachting, and in consequence was obliged to depend on others to distinguish the signals of vessels when sailing at night. Both son and father often spoke of the brilliancy of blue and seemed not to be able to understand why others did not appreciate the beauties of this color as well as they.

This peculiarity of "color-blinds" of seeming to see certain colors much better than those possessing normal color sense, would tend to confirm Young's hypothesis as one color being wanting, the others would appear in their pure state. Persons not color-blind can appreciate this condition by the following experiment. If one half of a piece of bright red cloth be covered by a dark substance, and the vision steadily fixed upon the uncovered portion, in suddenly removing the covering, the por-

tion of the cloth previously hidden will appear much brighter than that at which we have been looking, or if we look intently at any color for some minutes and then throw its after-image upon its complement, the latter will appear much more intense than we usually see it.

The dangers of color-blindness are so apparent from what I have said in regard to the vision of those who are color-blind, that little can be added, but that accidents have and may occur at any time is certain. I know personally of one case occurring on Lake Erie. A steamer ran down and sank a sailing vessel. Suit was brought against the company owning the steamer by the owners of the sailing vessel, and during the examination of the pilot of the steamer, it was found that he was color-blind. He confessed that he was unable to distinguish the lights and in consequence the collision occurred. This would seem in itself to have been sufficient to have caused an examination of all in the employ of that company at least. None was made, however, until I undertook, for my own information, to test as many of those employed on steam and sailing vessels as would allow it. I found about two per cent. to be defective, but of course could draw no accurate deduction as quite a number refused to comply with my requests.

There are several methods of treating for color-blindness, but that known as Holmgren's is the one usually adopted on account of its simplicity and not requiring much time. A large number of skeins of worsteds of different colors are taken, and the person to be treated is required to match one taken as a test. This is a light shade of green, and is called the "test green." If no mistake be made the individual may be considered free from color-blindness, but if any of the "confusion" colors be placed with the green, color-blindness undoubtedly exists. In order then to ascertain whether it is red or green the test pink is used. If now blue or purple be added to the pink, red blindness exists; if green or drab, green blindness. In violet blindness violet is confounded with certain shades of yellow. The following table will show to some extent the prevalence of this defect among railroad employes.

EXAMINER.	PLACE.	NUMBER.	COLOR-BLIND.
Dr. Fontenoy,	Copenhagen,	1,084	31
Prof. Donders,	Utrecht,	2,300	152
Dr. Krohn,	Finland,	1,200	60
Dr. Stilling,	Cassel,	400	24
Dr. Von Reuss,	Vienna,	800	28
Prof. Holmgren,	Sweden,	7,953	171

Giving an average percentage of 3½.

Great credit is certainly due Dr. Jeffrys, of Boston, for his endeavors to have a systematic examination of the employes of our railroads enforced, and it is the duty of every medical man to do all in his power to assist those working in this direction.

ORIGINAL LECTURES.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

By W. R. Whitehead, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER.

LECTURE VII. TREATMENT OF STONE IN THE BLADDER.

Gentlemen:

Beyond careful attention to diet, which should be of plain and nutritious substances, and the use of alcaline drinks, as the citrate of potassa or the alcaline mineral waters, as those of Vichy, the medical treatment of calculus disorders is usually of little avail. Ultimately, with rare exceptions, the treatment is surgical; but the observance of dietetic and hygienic precautions are exceedingly useful in allaying irritation of the bladder, and preparing it to become more tolerant of calculus deposits. Practically, then, the treatment of stone in the bladder may be said to be, in the great majority of cases, purely surgical. To rid the bladder of the offending cause, is the most efficient and quickest way to relieve the patient of suffering, and this can only be done usually in one of two ways: either by crushing the stone in the bladder by means of an instrument called the lithotrite (see fig. 1), and the evacuation of the fine ditritus into which the stone is crushed through a catheter, or by a cutting operation through the perineum or in the supra-pubic region, and which is known as lithotomy. This latter operation, will, in my opinion, become so restricted in the future, that I shall have but little to say about lithotomy. Yet, only a few years ago, and possibly now, to some old surgeons whose most pleasing associations still cling to their successful cutting operations for stone, such

a statement would seem strange, especially when we recollect that heretofore the history of stone has been largely that of lithotomy; but the new operation known as rapid lithrotrity bids fair to entirely supercede the cutting operation in future.

FIG. 1.
French Lithotrite.

For more than fifty years lithrotrity has been known and successfully practiced; but nearly always it has required many successive operations of crushing before the entire stone has been reduced to powder, and removed by the stream of urine, or evacuated by washing out the bladder. In January, 1878, Biglow of Boston, published in the *American Journal of the Medical Sciences*, a remarkable paper entitled *Litholapaxy*, which is more appropriately known as rapid lithrotrity; and which is the entire fragmentation of a calculus under ether, and the washing of the debris from the bladder through a large urethral tube by aspiration, so as to free the bladder of all calculus deposits at a single operation. The idea of trying to remove a stone form the bladder at a single operation, or sitting, is not new; this was done by Heuteloup, Leroy d'Etiolles and others a long time ago. But such attempts were found to be impracticable, on account of the deaths or dangerous results attending them, largely due to the inefficient instruments used, causing injury to the bladder and deep urethra, and to these causes were potently combined, the intollerence of the bladder, made so by a prolonged operation within this organ. But Biglow etherized his patients whom he subjected to lithrotrity, and litholapaxy was created; and Biglow's operation, or rapid lithrotrity became the most successful and the accepted operation for the removal of vesical calculus. Sir Henry Thompson had before Biglow's publication called attention to the necessity of ridding the patient of stone as speedily as possible, to relieve the consequent cystitisand vesical distress. His lithrotrity sittings were made at shorter intervals, and occasionally he used ether, and indeed was on the point of inventing rapid lithrotrity; yet the general application of an anæsthetic to lithrotrity with a view of terminating the crushing of a stone at a single sitting, had not occurred to the eminent English specialists, and greatest of living lithrotritists. If the Yankee surgeon, with the quick perceptions of his race, had not discovered rapid lithrotrity, and cleverly called it litholapaxy, this operation

would have followed as a natural and logical sequence in the path of Thompson's successful tentatives.

Keyes, Thompson and others soon followed Biglow, and confirmed the fortunate results of the Boston surgeon's discovery. Of 120 operations by 28 different operators, and on patients of the average age of 55 years, six deaths resulted or only five per cent. Better results than this, as stated by Keyes, have been obtained, so as to make the death-rate only one in thirty, at an average age of sixty years. This is far better than with ordinary lithrotrity, which is about one death in 13 cases (Thompson), and instead of limiting the diameter of the stone to one inch, Biglow has successfully crushed a stone 2¼ inches in diameter by the new operation.

Thompson, before Biglow's general application of ether to lithrotrity, occasionally used an anæsthetic, and made free use of Clover's washing bottle, which is an aspirating apparatus consisting of a large catheter introduced into the bladder; the crushed fragments of stone being sucked out by the aspirating action of an india-rubber bottle attached to the catheter. The general application of an anæsthetic to lithrotrity with immediate evacuation after complete fragmentation of a calculus, is, however, due to Biglow.

The utmost care and gentleness is required in the use of the lithotrite, which should be small, light and strong and that will not clog, to avoid injury to the deep urethra, and to avoid pinching the folds of the bladder. Keyes states that he has operated upon patients in advanced life, who were suffering from great general debility, or who had moderate pyelitis, Bright's disease, probable kidney stone, chronic bronchitis, extensive valvular disease of the heart, sub-acute orchitis, etc. Hypertrophy of the prostate offers some difficulty, but does preclude the use of rapid lithrotrity in the treatment of vesical calculus. Strictures should be cut, if necessary, previously; and the meatus may require to be cut to admit the largest size washing tubes. There are certain counter indications for the use of this operation, as for instance when the stone is too large and hard to be caught and broken by the lithotrite, or the nucleus is of some hard substance, as of iron, or of glass, or something unsuitable for crushing.

Keyes (*Amer. Jour. Med. Sciences*, Aplil, 1880, and Amer. Edition *Holmes' System of Surgery*) recommends slight rest before the operation, with the use of citrate of potash and Bethesda water. If the urine is putrid or ammonical, he advises that the bladder be washed out previously with borax and hot water—about a teaspoonful to the pint; to examine the size of the urethra, and if necessary, cut the meatus so as to admit a full size washing catheter. The bowels should be moved,

and ten grains of quinine given two or three hours before the operation, and a hypodermic injection of morphia made ten minutes before the ether is anministered.

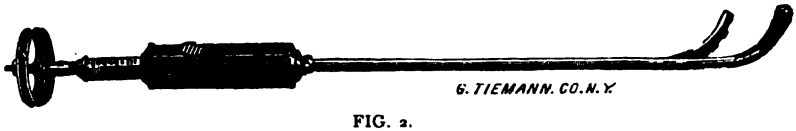


FIG. 2.

The instruments should consist of a light and strong lithotrite that will not clog, and one that will not pinch too readily the folds of the bladder, like Thompson's lithotrite, see Fig. 2. A washing tube and washing bottle are required, which, by the successive compression and expansion of the rubber bottle forces in and out the water into the bladder, and deposits the debris into the glass tube or receptacle *a*, below the rubber bulb *A* of the washing bottle. (See Figs. 3 and 4.) If air is

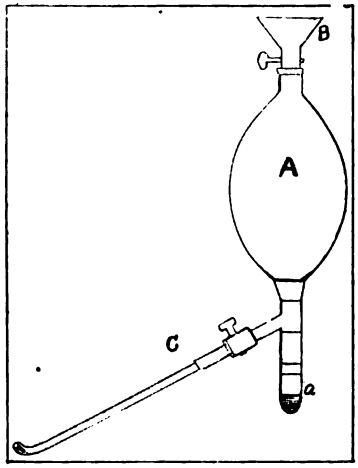


FIG. 3.—Thompson's washer.

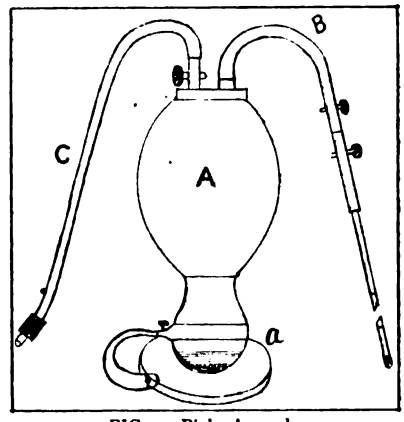


FIG. 4—Biglow's washer.

carefully kept out by cautiously inserting the washing tube, and proper attention given to the stop-cocks of the apparatus, the water is kept comparatively clear and free from froth, and the particles of crushed stone may be seen dropping into the glass recptacle while aspirating the bladder. The click of the fragments against the catheter may be heard by the impulse of the water flowing in and out of the bladder, if the ear be placed near the bladder.

Now gentlemen, if you should attempt the ordinary operation of lithrotrity, and without ether, and you pinch a fold of the bladder, you should at once discover it—that is in most cases—at least your patient will make manifest the fact and remind you by his complaints.

Dr. Keyes reminds us in his publications, of a very important precaution; which is, to be exceedingly careful not to pinch folds of the bladder during rapid lithotrity; in fact his reiterated caution on this point clearly shows, if he does not so express himself, that rapid lithotrity is an operation which should fall only to the select few eminent specialists like himself. But he is forced to recognize that a good and useful operation like this, must fall sooner or later within the domain of general surgery, as the recent increased demand for lithotrites, which he shows, abundantly proves. While the patient is under ether, if the lithotrite should seize a fold of the bladder, and you should not know it, great injury might result, unless you should drop it before you screw up the lithotrite. Rest assured, gentlemen, this has been done by hands reputed more skillful than yours or mine; just as I have seen a nerve tied sometimes on the cadavre for an artery, as a result of pure carelessness or inattention.

I have again to remind you of what I have already said in a previous lecture, that when you introduce any instrument into the bladder, have your wits about you, and exercise the utmost gentleness and care; besides the operatiou of rapid lithotrity is not, as its name would seem to imply, one to be done rapidly; but as Biglow, its inventor, tells us, one to be done slowly, carefully and deliberately. Practice on the bladder of the cadavre, is useful to any one who proposes to study the use of the lithotrite, and I shall endeavor to exercise you in crushing bits of soft stone in this manner.

Now let me make some suggestions about how to avoid pinching the bladdder. Having introduced the lithotrite as I have described to you, if you pick up a fold of the bladder you should be able to know it, because it is soft and yields. If you attempt to move the beak of the lithotrite about in the bladder, depressing the beak of the instrument, elevating it, or moving it from one side to the other, you should discover whether you have caught a fold of the bladder, even should the soft feel of the thing which your lithotrite seizes not warn you. The fold of the bladder, of course will restrict the movements of the instrument. If you have seized a calculus there will be a hard feel communicated to the hand through the instrument; and if the calculus is not sacculated, having seized it, it will be freely movable; whereas a fold of the bladder will hold the instrument to its place. Besides use the utmost gentleness in seizing, and the greatest tactile care in approaching the blades of the lithotrite, especially before screwing it up. Suppose you were to take a pair of tongs in your hands, and shutting your eyes, or in the dark, were to seize a rag with your tongs instead of a lump of coal, surely any one would know the difference. Exercise the same kind of tactile common sense, with the lithotrite and it will serve you well; but let us thank Dr. Keyes for

his excellent precautions though they may be overdrawn; but I make free to confess, that I have had no experience whatever with rapid lithotrity, which, however, will not prevent me from attempting to give you an illustration of this operation if occasion should permit; but I do not think that you will see much of calculus disease in Colorado, as it is almost unknown in this state; indeed most of the physicians in this city know of but one case that has been observed in Denver. Some of you may in your practice meet with calculus, and it is not proper that you should recommend or attempt lithotomy, if your patient is a proper subject for the new operation of rapid lithotrity; therefore some practice on the cadavre, coupled with these remarks, may prove of service to you.

I shall not forget my preceptor, Caudmont, of Paris, with whom I used to break bits of soft stone with the lithotrite, in the bladder of the cadavre, and amused myself in picking up folds of the mucous membrane of that viscous; but that has been a long time ago; and I value the precaution of Dr. Keys, and cannot too highly commend to you his advice in this respect, which is both timely and excellent.

It is, however, extremely desirable to make yourselves acquainted with the minutest details of any operation which you practice, and especially so of those on the genito-urinary organs. Attentive and intelligent precaution, with study, added to self reliance, that quality which so preeminently distinguishes Americans, happily blended with a scrutinizing mistrust of your own knowledge, will make of you, if you desire, good lithotritists as well as good surgeons. Unfortunately there are too many bold attempts by practitioners to do even simple operations for which they are unqualified, for want of proper preparation; but this I hope will not be said of the students of the medical school in which I teach; such is certainly not generally justified by the eminent success that has attended the representative surgeons of America. It was Piorry, I believe, that I heard qualify ovariotomy as "une audace Americaine," and which I conceive to be the highest tribute to the the thoughtful, bold and self-reliant character of our countrymen that a Frenchman can make. But, gentlemen, let your boldness be moderated by reflection before you attempt to crush for stone; and observe the precautions which I have pointed out to you, and I believe that you need not fear to attempt rapid lithotrity after a little practical crushing on the cadavre.

Having reason to believe that rapid lithotrity, will eventually and at a near period, supercede nearly all other operations for the removal of stone; and considering also the extreme rarity of calculus in Colorado, I must necessarily be brief in speaking of lithotomy, and merely allude to an operation that has been much more honored in the past, than it will be in the future.

It is not remarkable that the success of Dudley, of Kentucky, in the operation of lithotomy with the exception of Martineau and Pouteau, has never been equalled either in this country or in Europe. The average for American statistics, according to Prof. S. D. Gross, is one death in 14¾ cases. Dudley lost 1 in 34½ or 6 in 207 cases. Cheselden 1 in 10.65 or 20 deaths in 213 cases. Martineau lost 1 in 42 or 2 in 84 cases; Pouteau 1 in 40 or 3 in 120 cases, and Valentine Mott 1 in 23 or 7 in 162 cases. But statistics are deceptive, because the mortality is quite different at different ages, and selected cases from private practice influence favorably the result; and then again circumstances of an unfavorable character may give to the most careful and skillful operators a large death rate. Professor Gross' practice embracing 140 cases resulted in 12 deaths, or 1 in 11⅔; but of this 140 cases 66 were children, and of this number he lost only one, while Guersaut at the Hopital des Enfants at Paris cut 60 children, and lost 9 of them, or 1 in 6⅔ cases. There is no doubt that the skill of the surgeon influences the result; and a certain amount of careful preparation of the system is of advantage. Dudley attached great importance to it, and his success would seem to justify his precautions; and so did Martineau; Liston attached very little importance to previous preparation, and lost 1 in 7½ or 16 out of 115 cases.

It is unnecessary for me to describe at length the different cutting operations for stone; but the above statistics have reference to lateral lithotomy. The perineal operation, which involves a division of the prostate either on one side, or on both, is called lateral and bilateral lithotomy respectively. Median lithotomy for the extraction of moderate size stones only, is known as Allarton's method and is generally a safe operation, and has been very successfully practiced in this country by Walter, of Pittsburg, Markoe and Little, of New York, and resembles really perineal section, of which I spoke to you in the treatment of traumatic stricture of the urethra. Supra-pubic lithotomy is only admissible when the calculus is of enormous size, which is rarely seen at the present day; or when the prostate is disproportionately hypertrophied, or there is a large sacculated calculus. The result in supra-pubic lithotomy is one death in about three and a half cases, and is dangerous on account of peritonitis and urinary infiltration, but is free from hæmorrhage, and does not expose the patient to wounds of the ejaculatory ducts or of the rectum, which, however, are of minor importance, compared with the danger of the escape of urine into the abdominal cavity with resulting peritonitis.

At our next meeting I shall talk to you about hydrocele, and shall have an opportunity to illustrate this subject clinically.

ORIGINAL TRANSLATIONS.

THE HEREDITARY TRANSMISSION OF SYPHILIS.

By Professor M. Kassowitz, M. D.,

ATTENDING PHYSICIAN TO THE GENERAL HOSPITAL FOR CHILDREN, VIENNA.

Translated by Milo A. Wilson, M. D., Denver, Colo.

(*Continued from March Number.*)

VI. *Theory of the Heredity of Syphilis.*—It being proved, according to the thorough investigations thus far obtained, that

The direct transmission of syphilis from the father to child undoubtedly occurs, because in innumerable cases the health of the mother of an hereditarily syphilitic child has been subsequently proved.

As, further, transmission to the fœtus from a mother syphilitic at the time of conception is generally and indisputably accepted.*

As, finally, the placental infection of the fœtus has been entirely excluded:

Therefore, the theory of the heredity of syphilis appears in the highest degree simplified, and bears from this simplicity alone, the stamp of truth. It runs as follows:

The transmission of the syphilis of the parents to the child—as a matter of course, apart from the extra-uterine inoculation of the latter—*occurs solely and alone through the act of procreation*, consequently, through inheritance in the narrowest sense, because the father, syphilitic at the time of procreation, provides a sperm-cell containing the syphilitic virus, or the constitutionally syphilitic mother furnishes at the moment of conception an ovum similarly diseased for the generation of the new individual.

Father and mother are entirely equal in relation to the power and the process of the inheritance of syphilis. Syphilis inherited from the father differs in no way from that inherited from the mother. The assertion of Baerensprung that the hereditary syphilitic affection of the liver only takes place in heredity from the father, the hereditary syphilitic disease of the lungs, on the contrary, exclusively from the mother, has proved itself to be entirely unfounded and untenable.

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* The question of the sterility of constitutionally syphilitic women will be discussed further on.

The presence of general syphilis at the time of procreation in one of the parents alone is sufficient for the transmission of the same to the child. As a matter of course, also, a child, *both* of whose parents suffer from general syphilis at the time of procreation, inherits the disease. Whether, in such a case, the poisoning which is transmitted from both cells of procreation is concentrated in the new individual, is a point which in a single case is neither to be asserted or denied. At all events, as we shall prove later statistically, the liability of a more intense poisoning of the product of such a conception is, owing to this combination, increased.

The inoculation of the mother with general syphilis, after conception has occurred, has no influence upon the transmission of the disease. If the father is healthy at the time of conception, the product, consequently, of two non-syphilitic cells of procreation, cannot afterward become diseased *intra uterum*, and it is born healthy. If the father is syphilitic at the time of conception, the paternal disease is transmitted to the fœtus; the syphilis of the mother, however, contracted subsequently, has no connection with the syphilitic affection of the fœtus.

The syphilis of the mother is only in so far more injurious to the progeny than that of the father for the reason that, apart from the power of transmission of syphilis equally invested in both parents, the probability also exists that the disease of the mother may cause an interruption of the pregnancy, and—independently of the syphilitic poisoning of the fœtus—the life of the latter may in this manner be endangered. We shall be placed in a position to strengthen this assertion also through statistical evidence.

Finally, the opinion that a syphilitic mother may affect the fœtus—be it syphilitic or not—in such an unfavorable manner that, in consequence of her own disease, she furnishes during pregnancy more unsuitable nourishment than if she were healthy, deserves certainly to be taken into consideration; to which, however, it must be said distinctly that this could have nothing whatever to do with the inheritance or transmission of syphilis.

Before we now proceed to follow up singly the practical results of the points thus far obtained, we will endeavor, in connection with them, to acquire a deeper insight into *the nature of the syphilitic virus.*

Here we have at once presented an acknowledgement, upon the ground of experience obtained through observation founded upon facts, that the syphilitic virus is neither transmitted from the mother with acquired syphilis, to the fœtus healthy from conception, nor from the fœtus diseased through the paternal sperm-cell, to the healthy mother; that, consequently, this virus does not pass through the partition-walls or septum of the maternal and fetal vascular systems in any or either direction. This non-

transmission appears at first sight somewhat remarkable, as we well know, and have in the beginning of this treatise expressly stated that other poisons, such as that of small-pox, measles, etc., passed through these walls, at least in one direction, from the mother to the fœtus. The contradiction is, however, only a seeming one. There exists, evidently, a very great difference between the contagion of syphilis, on the one side, and the contagion of the above named exanthematous, infectious diseases. According to all our knowledge, thus far, the contagion of the latter is fugitive—that is, it is not connected with a cellular element (cellular tissue) of the organism creating the contagion, nor with a blood or a pus corpuscle, as it may even be transmitted from one individual to another by the surrounding atmosphere. We must, therefore, imagine it as suspended in the air in exceedingly minute particles, and is, evidently, also contained in the same condition in the secretions of the diseased organism. It can, therefore, be carried into the fetal circulation by the fluids emanating from the maternal vascular system, and may there occasion the corresponding disease-process. A case is even conceivable in which this disease-creating material, being brought from without into the maternal organism, is again further conveyed into the fetal circulation, occasioning a disease of the fœtus alone, while the mother remains spared; because, in her organism, the conditions for the development of this disease are not still present if she, for instance, has become exempt through a former illness.*

In relation to the syphilitic contagion it is quite different. This is undoubtedly a fixed contagion, *i. e.*, it is always connected with the cell-element (*Gewebselement*) of the diseased organism, and can only be transmitted to a foreign organism by this element. It is intimately associated evidently with pus-cells and blood-corpuscles, and is, therefore, not present in a fluid which contains no organized elements. At least, with a great number of such organic fluids, it is proved that they are not qualified to bring about an inoculation in a healthy organism, *i. e*, to transmit the virus thereto.

Accordingly, it has been often verified that the milk which contains, indeed, milk-globules (*i. e.*, a coagulated mass of fat globules), but no cell-elements, cannot transmit the syphilitic virus, which we also can confirm, as the result of very varied experience. The inocuousness of the serum of the blood is proved in the most striking manner, by the analogous experiments of Pelizzari. By means of a charpie compress, he

* Edward Jenner himself reports two cases in which two vaccinated mothers, being brought toward the end of pregnancy into close connection with small-pox patients, gave birth to children with pronounced small-pox without themselves becoming ill.

transferred fresh blood, obtained by venesection from a syphilitic man, into an incision upon the skin of a healthy man; and then the same blood, in a cold and clotted condition, in which the blood corpuscles are inclosed within the coagulated fibrin, upon two healthy men, in the same manner. Inoculation resulted only in the first case; the other two remained unaffected. As further evidence, it has been proved, through direct experiment as well as through clinical experience, that clear, pure vaccine-lymph taken from a syphilitic individual is not capable of transmitting syphilis. On the contrary, inoculation with the blood of syphilitics, with gonorrhœal, chancroidal, and bubonal pus, with the secretions of syphilization ulcers in syphilitics, therefore with fluids containing blood or pus corpuscles, have in many cases been successful.

If we now bear in mind the process of the interchange of nutritive fluids between the maternal and fetal circulations, it is apparent that even fluids and gases, as well as substances which are dissolved, or exceedingly finely divided and suspended in the same, pass from one vascular system into the other; but that there can never be a question of the passage of a blood-corpuscle from the circulation of the mother into that of the fœtus, and *vice versa*, because such a transmission is rendered impossible by the complicated nature alone of the materno-fetal septum between the two vascular systems, viz., vascular wall of the venous spaces in the decidual tufts; cylindrical epithelium of the latter; pavement epithelium of the chorion meshes; mucous membrane of the latter, in which the fetal capillaries are deeply situated; vascular wall of the capillaries. Consequently, as an interchange of blood-corpuscles is not possible, so, for the same reason, the passage of a virus, engrafted upon them, is in both directions prevented; a result which, as we have seen, corresponds entirely with actual experience.

Another point, regarding the nature of the syphilitic virus, arises in the consideration of the gradual differences, which are of importance, relative to the hereditary transmission of this virus. In the remaining diseases, which we must assume are inherited in the same manner, viz., through the semen or ova, such a gradual difference is either entirely unprovable, as in mental diseases, epilepsy and similar affections; or, if such gradations are really present, as in phthisis, gout, etc., they are entirely anomalous, and cannot be relied upon in any way as legitmate. We see, on the contrary, in the inheritance of syphilis in a succession of consecutive births, which owe their inherited dyscrasia to the same parental source, a constant, positive decrease, we might almost say, in reversed arithmetical progression, in the intensity of the poisoning, evidencing itself particularly in the gradually retarded outbreaks of acute syphilitic symptoms in each child. While, for instance, the first most

intensely-affected embryo succumbs during the fifth or sixth month of intra-uterine life to the outbreak of fetal syphilis, all further gradually decreasing grades of intensity of the poisoning may, in a satisfactory number of consecutive pregnancies, appear in a regular and continual succession. The fœtus may die in the seventh or eighth month; a child with pemphigus may be born in the last month, or at the end of the normal period of pregnancy, or there follows an eruption of the exanthema during the first days of life; then, in the second, third and fourth weeks, or in the course of the second, third, or even at the end of the third month.

These peculiar conditions allow us to regard the process of the inheritance of the syphilitic virus through the cells of procreation as one more conceivable—I might say as more commonplace—than the process of the inheritance of other physiological or pathological qualities, which are at once removed from every more searching investigation. The contagion of syphilis, whether it acts through infection or heredity, we must at all events consider as something organic in character; if not exactly as an independent organism of an animal or vegetable nature, nevertheless, as morbid alteration of a never so minimum portion of organic material, which, under suitable conditions, may be disseminated through the remaining mass of the same organism—be it a solitary cell, like the ovum or the sperm-cell, or a collection of cells, as in the embryo, the fœtus, and the living individual—and, being transmitted with a particle of the diseased being into a foreign organism, creates there the same successive modifications. We must, therefore, necessarily conclude that in a cell of procreation, derived from a syphilitic individual, the specific virus, *i. e.*, the organic material, morbidly altered in a certain way, already exists as such, just as it is contained in a pus or blood corpuscle furnished by the same individual. This does not exclude the possibility that the degree (stage) of development of this organic matter in a procreative cell may be a different one, perhaps of a lower order, more recent (*jungere*), than that of a pus corpuscle furnished by an ulcerated primary lesion or moist papule; because, in the last case, as a rule, only eight or ten weeks—in the first, however, from six to twelve months—elapse before there appears, within the organism receiving the virus, the first development of the analogous lesions, such as syphilitic infiltration of the skin and mucous membranes, in the form of maculæ, papules, etc.

We must also, of course, not loose sight of the fact that, in the first case, we have to deal with an organism already developed, in the other, with one just developing.

While, then, in view of the conditions just evolved, it might seem proper to imagine the virus contained within the cells of propagation as *qualitatively* different from that within the blood and pus cells of an individnal suffering from already developed syphilis, we can, on the other side, only explain the varied operation of the virus in several cells of procreation, furnished consecutively by one person during a long course of time, as also the gradual decrease of the syphilitic heredity, by considering that these cells contain the specifically-altered organic material in a varied proportion, consequently only *quantitatively* different; and that the amount of virus contained within the cells of procreation is, as a rule, proportionate to the amount of virus distributed through the parental organism, which, in recent, general syphilis, must necessarily be very large, and in an illness of long duration probably always decreases more and more. In the acceptation of a qualitative difference of the virus, in the procreative cells produced in the different stages of parental syphilis, consequently a difference in the degree of development of the virus, we would be accepting the unpardonable fallacy that a very *recent* parental syphilis, in which the virus also must necessarily be in an early stage of development, effects, notwithstanding in a very much *shorter* time, the full development of the disease in the fœtus, than the virus communicated to the cell from an organism affected with chronic syphilis; and which, in spite of the fact that it (the latter) is in a more advanced stage of development, nevertheless, requires several months longer before it can effect the full development of the disease in the fœtus.

As, therefore, a qualitative difference, or a difference in the developmental stages of the virus, in the single procreative cells, does not explain these conditions, we are forced to the assumption of a quantitative difference. In recent syphilis of the progenitor, there would exist, naturally, owing to the greater amount of virus accumulated within his organism, a proportionately larger number of individual diseased propagation-cells; and the *greater* amount of specifically-altered material contained within these cells would effect the complete development of the disease in the fœtus in a *shorter* time than the lesser amount of virus which, owing to the long duration of the already modified (weakened) parental syphilis, and to the greatly decreased amount of virus disseminated throughout the parental organism, could now only affect isolated, scattered cells. An analogy with the process of fermentation is here scarcely to be overlooked, inasmuch as a larger amount of the material employed to excite the fermentation, in a definite mass to be fermented, must effect this result much more quickly than a lesser amount of the same material. With this, however, the analogy, of course, ceases.

Since we have now succeeded in defining the mode of inheritance in this manner, it behooves us further, upon the one hand, to discuss the conditions upon which the parents are enabled to transmit syphilis to their progeny, and, upon the other hand, to become more closely acquainted with the relations between tne intensity of the inherited disease and the stages of that transmitted. The chapters immediately following will treat of these subjects.

VII. *Power of Transmission in the Parents.*—The first and essential condition is, as a matter of course, the existence of syphilis in the individual transmitting the disease. We must, therefore, at first, without entering more closely into the controversy regarding unity and duality, assert at this point, that only syphilis in a general form, whether proceeding from a genuine Hunterian chancre, a primary papule, or, finally, apparently from a soft chancre, possesses the capability of being transmitted to the progeny; and that, accordingly, there can, of course, never be a question of an inheritance of syphilis from an individual suffering from mere virulent blenorrhœa, or from a local chancroidal ulcer, producing at the most buboes in the adjacent lymphatic glands.

The answer to the question, *when*, after a syphilitic inoculation, *the individual inoculated has the power to transmit syphilis*, is not so simple; whether during the latency of the primary lesion, consequently between the time of infection and the development of the primary induration, or the primary papule equivalent to it, or only after the formation of the primary lesion, and before the development of the first general symptoms (universal swelling of the glands and exanthemata), or, finally, only after the appearance af the latter. This question, up to the present time, is still undecided, and, owing to the nature of the subject, will probably always remain so. Observations of such reliability and reliability would be required as can but remarkably seldom be made. We are well entitled, however, to exclude, upon theoretical grounds, the power of transmission during the first period of incubation, therefore before the formation of the induration, because the Hunterian chancre is not regarded now, as it was by Baerensprung, as an evidence of general disease, but as a local product of infection. The second period of incubation, between the formation of the chancre and the outbreak of the first general appearances, will probably always remain doubtful. On the contrary, syphilis, from the moment of the eruption of the first exanthemata, is undoubtedly transmissible. The assertion of Cullerier, that the mother can transmit syphilis to her child in every stage including that of the simple primary lesion, is stated by this author, without any foundation whatever upon truth. Merely as a curious fact, we will here mention the opinion of Albers (1832), who held it to be possible that a syphilitic man, during

coitus with a pregnant woman, might inoculate the fœtus without the mother becoming diseased. Diday, also, in his highly-extolled work (*l. c.*), regards this wonderful method of transmission as not impossible.

The opportunity here presents itself to speak of the so-called *infectio per partem* (*infection au passage*), which in its time played so important a *role*. The question is simply whether, during the time of labor, the child can become inoculated by local syphilitic affections of the maternal genitals, of either a primary or a secondary character. This question, of course, has nothing to do with the heredity of syphilis, but was formerly, particularly in the beginning of this century, deemed of great importance by the non-supporters of heredity; because, by this means of inoculation, they could explain the so-frequent undeniably syphilitic affections of new born children. That these writers could justly attribute an isolated case of infantile syphilis to this mode of inoculation is perhaps possible. But all positive points are wanting as to how they explained the illness of a succession of children of the same parents by the *infection au passage*. As, now, no one doubts the existence of hereditary syphilis (except Hermann, 1860, who denies the disease in general, consequently also its heredity, regarding the symptoms, held by all others as those of hereditary syphilis, to be brought about by deficient care and nursing), therefore, also, the necessity or importance of this manner of infection has disappeared, and, in fact, since the time of Thiry (1852), who was the last who mentioned it, and even gave it the unsuitable title of "hereditary chancre," it has remained unspoken of. If we should now discuss the possibility of such an inoculation, we must first of all state that, notwithstanding the many hundred times it has been mentioned by writers, there is not to be found in all literature a really trustworthy report of an "*infection au passage*" having taken place. The two solitary cases spoken of by Behrend (1851) are in no way reliable, because, in the first case, the general exanthema appeared in the child as early as the tenth day; in the other case, the primary ulcer upon the second day, and afterward only an eruption, "which was very similar to dry eczema." All remaining authors refer to their predecessors, and these again discuss only the theoretical possibility, without communicating positive observations. Further, it is well known that again and again numbers of women with syphilitic ulcers upon the genitals, and masses of suppurating condylomata in the vicinity, have given birth to children without inoculating them. In several cases, in the Vienna Lying-in Institute, I had myself the opportunity of proving this. The transmission of a simple chancroidal ulcer, which is in the highest degree inoculable, from the genitals of the mother to the child at birth, has, to my knowledge, been equally seldom observed. Consequently, as all practical experience entirely fails, it only remains to

discuss theoretically the chances of such an infection, which, in principle, is not impossible. They are, at all events, in consequence of the child's body being covered with the vernix caseosa, by the mass of amniotic liquid, and by the quick passage of the larger portion of the child's body through the external genitals of the mother, remarkably slight. We may, then, with confidence drop this subject, and, if at some time such a case should really occur, it would be entirely irrevalent to the subject with which we are now concerned.

From the moment of the outbreak of general syphilis, the individual suffering from the same possesses the power to transmit the disease to his progeny by means of the cells of procreation. This power, which we will designate as *procreative syphilis*, is, therefore, one of the symptoms of constitutional syphilis, and, indeed, one of the most important. Even if it is not so easy of observation as the lesions upon the skin, the mucous membranes, etc., which come under immediate inspection, it is, nevertheless, in the highest degree significant for the determination of the degree and intensity of the disease, and may be even, although only for a limited period of time, the only symptom in which syphilis in an individual manifests itself.

This capability is entirely independent of the syphilitic affections of the testicles and ovaries, and in fact such a perceptible affection, particularly in the latter, is remarkably rare in spite of the great frequency of the transmission of syphilis. This, however, need not be surprising, as no one would hold as essential, in the inheritance of phthisis, a tubercular process in the testicle or ovaries of the parents. Frankel (*l. c.*), then, is entirely in error if he does not believe in inheritance through the ovum, merely for the reason that syphilitic affections of the ovaries are of such rare occurrence, and because at the autopsy of a mother he found no such lesions.

Latency of Parental Syphilis.—If we follow the course of syphilis in an individual in whom the disease is unmodified by any effective or rather active treatment, we find that the visible symptoms (affections of the skin and its connections, of the mucous membranes, the bones, etc.) make their appearance always in an eruptive form, i. e., that, particularly during the first years, in the so-called secondary period, we can reduce all these appearances to certain eruptions, taking place from time to time, separated from each other by more or less lengthy periods, while at the same time no new products of the disease make their appearance. These outbreaks succeed each other at first very quickly, so that it often becomes difficult to separate them, because the products of the previous outbreak still exist when again new lesions are manifest. Those latter take place from time to time at longer intervals, and it can thus happen that, when the evidences

of the last eruption have already disappeared, and before a new one follows, there is during a certain period not a single externally perceptible or palpable symptom of syphilis present upon the still positively syphilitic individual. Such a condition, then, we may designate as one of latency. This latency, however, does not exist during the entire interval between two eruptions; much more, rather, a real complete latency is comparatively rare, because, even after the involution of the larger portion of the products of the last eruption, there remain in part always for a long time certain obstinate affections—an isolated condylome; one or another variety of papules upon the mucous membrane of the tongue or lips; several enlarged lymphatic glands; a periosteal swelling—also, there may be present orher signs of a syphilitic affection, for instance, alopecia.

These intervals between two outbreaks, and the latency of the syphilis occasioned possibly through them, may be explained in two ways. Either the virus is excreted for the most part from the organism through an eruption, and only in certain organs, probably the lymphatic glands, more or less stored away and rendered temporarily innocuous until such time as it may again break forth and occasion general symptoms (Virchow), or the virus circulates continually in the whole organism, the tissues are unsusceptible for a long time to the irritation of the same, owing to a previous eruption, and only by an increase of the virus, or a modification of the tissues (perhaps through external influences, diseases, etc.), do we have another outbreak.

If we now examine into the relation of the symptom of "procreative syphilis" (viz., its transmissibility) to the intervals of eruption and the periods of latency, we find the noteworthy fact that this "symptom" (transmissibility) appears entirely independently of these periods, that it continues uninterruptedly from the commencement of the general syphilitic inoculation throughout a long period of time, and that, as far as we can judge from its visible consequences, viz., from the consecutive succession of the children of the individuals in question, it undergoes also in its intensity no striking modifications, but that there is a gradual and constant decrease, until it is completely extinguished. It is apparent that interruptions of any moment in the constantly decreasing power of transmission occur at the most but seldom, and that then such interruptions may usually be attributed to active anti-syphilitic treatment, which is especially effectual against this power. Particularly in the first years after the beginning of the syphilitic disease—without medical treatment—the birth of a healthy child between two intensely syphilitic never occurs; and also, during the first years, the birth of a viable syphilitic child, between the almost obligatory premature births and miscarriages, is of the rarest occurrence. From this we have evidence, not only of the possi-

bility, but also of the great frequency of the cases in which *parents with latent syphilis procreate children which are affected with the most positive signs of hereditary syphilis*, even, indeed in its most pronounced form. Only in the last period of the transmission power, when the parental syphilis is modified to such a degree that the affected children appear fully viable, and their constitutions but slightly injured, the parental inheritance showing itself only in a slight outbreak of specific symptoms relatively late after birth, is to be observed an *occasional* entire absence of the power of transmission—consequently, the birth of an entirely healthy child between two slightly affected ones (*see* Case XII. and the XVI., still to follow).

As, then, the power of transmission of syphilis does not run parallel with the important modifications in the intensity of the visible symptoms in the progenitors, but is rather a peculiarity (quality) in syphilitics more constant in character, decreasing only gradually in intensity, we must say, from this point of view, that of the two theories of the latency of syphilis alluded to above, that has the greater probability which does not suppose an occasional suppression of the virus, and a sudden outbreak of the same in a fresh eruption, but rather that which supposes its continual presence in the entire diseased organism, if even in a variable amount. The latter must certainly be the case, as the transmission takes place quite as well during the interval as during the relapse, and this would further explain the remarkably favorable influence which a mercurial course has upon procreative syphilis, even during the periods of latency.

The Influence of Mercurial Treatment upon Procreative Syphilis.—This subject, although it can only admit of exhaustive discussion in connection with prophylactic therapeutics, must nevertheless be mentioned here, because it affects in the greatest degree all the conditions above spoken of. The influence of a mercurial treatment is of importance in two different ways. Through it the power of transmission may be entirely suppressed, and then an intensely affected and consequently still-born child, or one that is unviable, is followed, even in a very short time, by an entirely healthy child; an event never observed in the spontaneous subsidence of the transmission power. Or the influence of mercury is only a relative one, and evidences itself by the fact that, in spite of a recent outbreak of syphilis in the progenitors shortly before the procreation—which left to itself would have as a consequence almost unexceptionally an abortion, a premature birth, and non-viability of the embryo—the child is born living and viable, and becomes ill only later and in a relatively insignificant form.

Examples of the first mentioned influences, viz., the complete suppression of the power of transmission, are very numerous in literature, and very often entirely authentically reported. In relation to the father we refer to the above-cited cases of several authors, and my own Case X, reported at the same place. Among them we include also the majority of those cases, reported by the believers in an exclusively maternal transmission, in which syphilitic men procreated healthy children with healthy women. We give the following as an example:

Charrier (*l. c.*) relates that a syphilitic man inoculated his wife, she afterward having three syphilitic children. He underwent repeatedly a mercurial treatment, while his wife was only very incompletely and carelessly treated. Coincidently with the third confinement of his wife, his mistress gave birth to a healthy child, supposedly by him. This case is —even accepting the illegal paternity as reliable—only to be interpreted in such a manner, that the third child owed its syphilis more to the less thoroughly-treated syphilitic mother, while the father, freed by a mercurial treatment from his disease, procreated with a healthy woman a healthy child.

An appropriate case of my own, in relation to the mother, is the following:

CASE XIII. *A Syphilictic Mother Gives Birth first to a Non-viable Syphilitic Child, and after a Thorough Mercurial Treatment, to a Living, Healthy One.*—The woman, aged now forty years, has from a first marriage two children, aged twelve and eight years, who have always been healthy. In 1870, having in the meantime become a widow, she contracted, illegally, syphilis, followed soon after by a general exanthema. After having been merely locally treated and apparently cured, she conceived in March, by her second husband, and bore,

3. In November, 1871, in the eighth month, a very feeble girl, which became ill from syphilis several days after birth, dying in a short time. The mother at the time suffered frequently with affections of the throat and larynx, lost her hair, and had finally gummata upon the anterior tibial surfaces. Toward the end of 1873 she placed herself under a combined treatment of mercury and iodine, which was continued also during the pregnancy commencing in the early part of 1874. She gave birth,

4. December, 1874, to a vigorous female child, which remained healthy, and still continues so. Six months after her confinement the mother seemed to be very strong, and of good appearance, but had upon the anterior tibial surfaces numerous cicatrices, and several recent tubercular growths.

The following case will serve to illustrate the second point, namely, the decrease of the yet recent power of transmission:

CASE XIV. *The Syphilitic Mother is actively treated with Mercury, and in the Second Year after her Inoculation gives birth to a Viable Syphilitic Child.*—A woman, who had given birth to three perfectly healthy children, and was then widowed, was primarily infected on the under lip, during the summer of 1870, one year after the birth of the last child; then followed ulcers upon the throat, hoarseness, exanthemata, alopecia. Soon after the outbreak of the general appearances, she placed herself under active mercurial treatment, and appeared at New-Year to be entirely cured. She conceived in March, 1871, and at the end of October, consequently at the end of the eighth month, gave birth to a girl, which at first seemed well, but after fourteen days fell ill with coryza, and had isolated vesicles between the buttocks and upon the soles of the feet, together with papules, and rhagades in the corners of the mouth. The child was cured.

In this case it is certainly not strictly proved that, had no treatment of the syphilis of the mother been employed, the child would have been more intensely affected; but, from the extraordinary infrequency of the birth of viable children, when a very recent (one to two years) non-treated syphilis is transmitted to them, we can confidently regard this modified form of the inherited affection as a result of the mercurial treatment of the mother.

The influence of an active mercurial treatment, which suppresses the procreated syphilis, or considerably modifies its intensity, is, however, not always a definite one, least of all in those cases in which, having been employed during an early period, it has suppressed the power of transmission entirely. But the weakening of the transmission power in point of time is also not always constant. Frequently the effect of the cure is lost in regard to a subsequent child, and upon this rests the explanation of those cases, comparatively rare, where, in a succession of syphilitic children, one of the youngest seems to be more severely affected than one older; if, for instance, a syphilitic child born at term is followed again by one unviable and born prematurely.

CASE XV. *Both Parents syphilitic. After the Birth of the First Syphilitic Child, both are treated with Mercury. Only the next Two Children are influenced by the Treatment. Those born later are again intensely affected.*—K., a tailor, aged thirty-one, begat, in 1865, with his mistress, now aged twenty-seven:

1, A girl, born in February, 1867, which, according to the records of the foundling asylum, and the corresponding statements of the parents, was healthy until four months of age, when it died with intestinal catarrh.

About the time of the next conception they were both inoculated—it is unknown which of the two became ill first—and had general syphilis.

2, A boy (1868), was still-born. Both parents now entered the hospital and were placed under treatment by inunction, as also internally. This was followed,

3, In 1870, by the birth of a female child at term, apparently healthy, which died when two months old with whooping-cough.

4. In the middle of 1871, a boy; in six weeks had an eruption, which continued for a year, and then for the most part dissappeared. A year and a half later there was still a large condylome *ad anum*. He died in June, 1875, when four years old, with measles.

5. 1872.—An abortion at four months.

6. 1873.—The premature birth of a girl at eight months, lived one day.

7. 1874.—A female child at term, apparently healthy until the fifth week, then had a macular exanthema. Was entirely cured and is now strong.

Both parents, who for several years after their treatment in tne hospital had felt entirely well, have suffered from three to four years with nocturnal headaches. The mother is very anæmic, and has a remarkably bad color.

In this case, the strikingly favorable influence of the mercurial treatment, which, immediately after the premature birth at the eighth month of the first child, rendered possible the procreation of a living, perhaps entirely healthy child, and of a second one very slightly affected, lasted only several years; and then followed again, in the fifth and sixth pregnancies, an abortion and a premature birth, and only again in the seventh was a viable, although syphilitic, child born.

VIII. *Duration of the Power of Transmission; Spontaneous Expiration of the Same; its Relation to Tertiary Syphilis in the Parents.*—In general, and *a priori*, we may assert that the power of transmission continues as long as the virus is still present in the parental organism. In certain cases this is, indeed, difficult to decide; but we may say however, with a great degree of certainty, that, as long as symptoms or lesions, with inoculable qualities, make themselves apparent, the possibility of transmission still continues. "Procreative syphilis" can, however, also probably continue to exist beyond the last outbreak of infecting lesions; for the reason that a very slight amount of virus is fully sufficient to affect specifically the cells of procreation, while it may not be in sufficient amount to bring about a lesion of the skin or mucous membranes. The special relation which it bears to the non-inoculable, so-called tertiary symptoms will be discussed later.

If, now, with the aid of our material of observation, we proceed to determine statistically the *duration of the power of transmission*, we find it associated, naturally, with certain difficulties. The absolute duration can, therefore, be decided only in the fewest cases; when, for instance, on the one side, the time of the inoculation of the progenitor is known (whether from memory, or from the sudden interruption of the succession of healthy children by the first syphilitic child), and, on the other side, when the cessation of the power of transmission can be proved, by the birth of a healthy child at the close of a succession of syphilitic children, with a continual decrease in the intensity. In most cases, only a fragment of the entire duration of the transmission power, through the succession of births, can be satisfactorily characterized, and, therefore, only an approximate conclusion drawn, in relation to the entire duration of this power. We can only consider two kinds of data as reliable and undoubted: 1. Number of the syphilitic births; 2. Length of time during which syphilitic births continued in each single case. These data are seen from the two following tables:

TABLE I.—NUMBER OF SYPHILITIC BIRTHS IN EACH MARRIAGE.

Number of Syphilitic Births.	Father alone Syphilitic.	Mother alone Syphilitic.	Both Parents Syphilitic.	conditions of Inheritance doubtful.	Total.
One	16	1	5	17	39
Two	11	1	6	11	29
Three	6	2	4	4	16
Four	4	2	..	5	11
Five	3	2	3	3	11
Six	3	1	3	1	8
Seven	..	1	2	..	3
Eight	..	..	..	..	..
Nine	..	..	..	1	1
Ten	..	..	..	1	1
	43	10	23	43	119

It can be seen from this table that the 330 syphilitic births collected by me are distributed in the 119 marriages in such a manner that certainly, in a large number of cases (39, 29 and 16), only one to three syphilitic births followed consecutively; it was, however, on the other hand, by no means rare that such a series protracted itself considerably in one and the same marriage; because, in eleven cases, four and five, in eight cases six, and in three cases seven, inoculated children succeeded each other, and one time even the number of nine was reached, as also once, ten.

From this alone we can form an approximate estimate through how long a period the parental transmissible syphilis may preserve its power, if it be in a condition to transmit the disease to from nine to ten consecutive children. The next table will prove statistically what period elapsed in my cases, between the birth of the first and last syphilitic child, in the same marriage. As a matter of course, those marriages with but a single birth are left out of consideration. In relation to the succession of births of two and more, we have the following table:

TABLE II.—ACTUAL DURATION OF TRANSMISSION.

Number of Years.	Father alone Syphilitic.	Mother alone Syphilitic.	Both Parents Syphilitic.	Conditions of Inheritance doubtful.	Total.
(Single birth).....	(16)	(1)	(5)	(17)	(39)
Two.....	2	..	2	7	11
Three.....	7	1	4	2	14
Four.....	3	..	2	3	8
Five.....	5	2	1	7	15
Six.....	6	1	3	3	13
Seven.....	..	2	3	1	6
Eight.....	4	..	2	1	7
Nine.....	..	2	..	..	2
Ten	..	..	..	2	2
Eleven.....	..	1	..	..	1
Twelve.....	..	..	1	..	1
	43	10	23	43	119

From this table it is at once evident that, disregarding those families with but few children, in a very considerable portion of all cases, the interval between the first and last syphilitic birth extended to five years, and even more; that we find very respectable figures for an actual duration of transmission during six, seven and eight years, but that in isolated cases this period reached nine and ten years; and that, in two instances, eleven and twelve years elapsed between the first and last syphilitic child. Consequently, in these cases the power of transmission undoubtedly existed continually in the individual transmitting the disease during all these years.

The following is a case *in extenso* of an actual duration of twelve years:

CASE XVI. *Both Parents Syphilitic; Twelve Years' Duration of the Syphilitic Transmission, and Birth of Seven Syphilitic Children. Upon decreasing Transmission-Power, Birth of a Healthy Child between moderately affected Syphilitic Children.*—The father is now forty-one, the mother

forty years old. From 1857-'62 they had five healthy children. During the fifth confinement of his wife the man contracted syphilis, and several weeks later his wife also. She had a macular eruption, lost her hair, so that for a time she was entirely bald, and had very violent headache. I could not ascertain much relative to the condition of the husband. It is certain, however, that neither of the two was subjected to any anti-syphilitic treatment worthy of mention. The subsequent births followed in this manner:

6. 1863.—A boy, still-born in the eighth month.

7. 1864.—A female child, born prematurely at eight months, with an eruption; very feeble; lived only seven days.

8. 1866.—A female child, born prematurely between the seventh and eighth months, died immediately after birth.

9. 1867.—A female child, born prematurely between the seventh and eighth months, lived twelve hours.

10. 1869.—A female child, born at term; had a general eruption, sore lips, snuffles, and died when two years old.

11. 1870.—A female child; fell ill when five weeks old with a maculo-papular eruption, which was cured with proto-iodide, as well as the relapses in the ninth and twentieth months. She died with pneumonia when two years old.

12. 1872.—A girl, born at term; was entirely healthy, and is still so.

13. August, 1874.—A healthy boy. The hereditary affection breaking out at this time made itself apparent only in a laminated desquamation of the epidermis about the balls of the toes (diffuse syphilitic infiltration of the skin in a moderate degree), and in a nodular or tubercular eruption upon the hands and feet. These appearances disappeared quickly under the proto-iodide of mercury, and the child is still to-day healthy and unusually strong; no relapses.

The mother, during the tenth pregnancy, suffered for several months with complete aphonia and ozœna. At present, it is true, she presents no recent syphilitic symptoms, but is very anæmic, has a scanty growth of hair, and a remarkably nasal tone of voice.

From this last table, however, only the actual duration of transmission in these certain cases is manifest; by no means, though, the entire duration of the transmission-power, as, indeed, in many cases, several years have elapsed between the inoculation of the progenitors and the birth of the first syphilitic child; and, on the other side, the last-born child does not necessarily terminate the succession of syphilitic children, so that the duration of the ability to transmit may exceed the period of actual transmission by many years. So, for instance, just in several of our cases in which the number of years is great, the transmission-power is never-

theless not to be regarded as extinguished, because in some cases the last child was still severely affected; and, consequently, if other births follow, they possess the certain expectancy of a specific inheritance.

CASE XVII. *Birth of a severely affected Syphilitic Child Ten Years after the Inoculation of the Mother.*—The woman, aged twenty-nine, was inoculated in 1864—in her eighteenth year—by her lover, and fell ill soon afterward with general syphilis, which ran its course without any treatment worthy of note. By him she had two children:

1. At the end of 1865.—A boy, still-born in the seventh month.

2. 1867.—A boy, still-born in the eighth month.

Being now forsaken by her lover, she was married in 1871 to her present husband, and gave birth,

3, 1872, to a boy, still-born at term.

4, 1874 (February), to a girl, which fell ill in the third week from a maculo-papular exanthema, also in the seventh week from a renewed outbreak of the eruption and a very painful swelling of the epiphiseal connection of the heads of both upper arms, with apparent crippling of both upper extremities. These appearances were removed by mercurial treatment, but there succeeded in the seventh and thirteenth months very obstinate relapses, which have, perhaps, not yet subsided.

As, in this case, the last child, which was born nine years after the inoculation of the mother, was still very severely affected (early eruption, disease of the epiphysis, etc.), and the birth of the same was preceded two years before by one still-born, we can decide here with almost positive certainty, from the analogy with other cases, upon a very marked intensity of the maternal syphilis, and upon an influence of the same still continuing through many years—presuming, of course, that the power of transmission be not brought to an early termination through mercurial treatment.

As, now, it occurred in five of my cases, in which the end of the transmission-power was verified by the birth of an entirely healthy child, that always five to seven years (twice, five; once, six; twice, seven) elapsed between the birth of the last non-viable child (*i. e.*, one born prematurely or still-born, or one born prematurely and dying after several hours) and the birth of the first healthy child, I have, consequently, in those twenty-four cases in which the beginning of the affection was accurately known, added the mean number of six years to the number of years until the birth of the last non-viable child, and have estimated, in this approximate manner, for my cases *a maximum of fourteen years, and an average number of ten years, for the duration of the transmission-power* in a

spontaneously decreasing syphilis of the progenitors unmodified by mercurial treatment.*

In three cases in which the commencement as well as the end of the transmission-power was known, the duration extended twice to ten years and once to seven years. Only in one of the first cases was once, in the course of the time, a mercurial cure employed; in both other cases the maternal affection ran its course unmolested. We have, accordingly, for my cases, *a minimum of seven years* for the duration of this power.

Relation of the Power of Transmission to Tertiary Parental Syphilis.—All that we have thus far learned of the power of transmission, of its duration, and its spontaneous disappearance, or its extinction brought about by mercurial treatment, is not in the least affected by the fact, which we have here to consider, that, namely, parents with pronounced tertiary syphilitic lesions can procreate children to whom the disease is not transmitted.

We have required, as a *prima conditio* of the transmission power, the presence of the syphilitic virus in the parental organism. But from the now prevalent, as it appears, entirely correct idea of the so-called tertiary lesions, these are no longer considered to be a localization (*Ablagerung*), or a direct effeet of the syphilitic virus, but much more, rather, only the evidences still of a peculiarity of the diseased organism called forth by syphilitic poisoning—whether it be already extinct, or existing only in its last stages—in consequence of which this organism does not react in the usual manner against such irritation as may arise, but, in the furnishing of a cell-growth, shows in the gummata characteristic changes and a peculiar course. Tertiary changes, then, may be already present, so long as the syphilitic virus still circulates within the organism—and then even the virus itself may serve as a source of irritation for the production of gummy products—but also they may still continue to exist after the virus is entirely eliminated or removed.

The relation of the transmission power to the tertiary symptoms is, therefore, rendered at once entirely clear. The transmission power may still exist when tertiary symptoms in the progenitor are already developed; it may, however, have been extinguished for a long period, either spontaneously or through mercurial treatment, while at the same time tertiary products may reign supreme in the parental organism. *The transmission power is, consequently, entirely independent of the condition of tertiary syphilitic affections in the progenitor.*

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* Henoch (1868) observed even the birth of a child with hereditary syphilis twenty years after the inoculation of the mother.

There is no lack of instances confirmatory of this assertion, either in literature or in my own personal observations.

Bertin (*l. c.*), Beyer (*l. c.*), and Acton (1851), have already admitted that healthy children may be born of parents with tertiary syphilis.

Virchow (1858) asserts that a man with gummy growths in the testicles procreated two healthy children.

Simon (1850) also relates two cases which belong here: A man with caries syphilitica procreated consecutively several healthy children; a woman with tubercular growths of the subcutaneons cellular tissue gave birth to a healthy child.

Sigmund (1858): A man who suffered seventeen years with bone syphilis procreated in the fourth year after the beginning of his disease one syphilitic child, and afterward several that were healthy.

Hebra (1860): A man with syphilitic necrosis of the cranial bones procreated in four years three healthy children.

Baerensprung (*l. c.*): In eight cases healthy children were born whose fathers suffered from severe tertiary syphilis, and in seven cases healthy children were born of mothers suffering in the same manner. All were thoroughly and repeatedly treated with mercury. In several cases abortions and premature births preceded the birth of healthy children.

Kobner (*l. c.*): A woman with obstinate tertiary syphilis gave birth, first to a child with hereditary syphilis, and then to five children unaffected.

Of my own cases, X. and XIII., already reported, belong here. In the first case a man, immediately after the outbreak of tertiary ulcerative skin lesions, procreated a healthy child; in the second, the mother suffers with gummata of the skin both before and after the birth of a healthy child. In both cases the transmission power was suppresed by energetic treatment.

But, on the other hand, I have also observed that parents with pronounced tertiary symptoms still procreated children with hereditary syphilis, as also occurred in the cases reported by Sigmund and Kobner.

CASE XVIII. *Chronic Syphilis of the Father with Tertiary Lesions; Healthy Mother; Syphilis in the Children, with gradually decreasing Severity.*—The father, aged now thirty-two, was inoculated in 1865, but was never systematically treated. In 1868 he married a girl aged twenty-three. Since 1869 he has suffered from an ulcer upon the left anterior tibial surface, which from time to time heals and again reappears. The tibia is irregularly thickened; the cicatrix adherent to the bone. Order of the births:

1. December, 1869.—A boy, still-born in the seventh month.

2. August, 1870.—A boy, still-born in the seventh month.

3. September, 1871.—A boy, still-born in the eighth month.

4. September, 1873.—A female child at term; suffered a week after birth from a macular syphilide and specific infiltration of the soles of the feet and palms of the hands; was cured with proto-iodide. She continues, however, very feeble, and is affected with chronic hydrocephalus to a slight degree.

In another case, the mother of three children, with congenital syphilis, their births closely following each other, had, since the time of her second confinement, a gummy tumor in the skin—lower part of the thigh.

The peculiarity of the specifically affected organism which evidences itself by the development of gummy products does not, then, begin just at the moment of the extinction of the syphilitic inoculating and transmitting powers, but may also exist still at a time in common with the latter. It may, tnough, only first manifest itself after the complete loss of the capability to transmit, and may even continue through several years after such loss or extinction. In the first case the individual affected with syphilis can transmit the disease; in the latter case not; and thus the relation of transmission power to the tertiary disease explains itself in the most satisfactory manner.

Is the Transmission of Syphilis Unconditional?—Upon this question writers, as a rule, do not express themselves decidedly. Many, though, regard the transmission as not obligatory, believing also that several children of syphilitics remain free, but say nothing whatever as to the conditions of such immunity. Kobner (*l. c.*), for example, says the transmission of syphilis to the progeny is the general rule, but does not result necessarily, even if the mother, and even if the father also, either before or at the time of conception, were already generally syphilitic.

According to my experience, I must completely reject such views of heredity. I know of but two ways in which parents positively syphilitic can procreate healthy children during the active period of the virus, viz.: *first*, if the mother, after the conception of an embryo not rendered syphilitic by either parent, has only first acquired general syphilis during the pregnancy; and *second*, if the syphilis of the progenitor, just at the time of, or shortly before conception, were overpowered by very energetic mercurial treatment. In all other cases transmission follows absolutely, as long as syphilis in one or both of the parents is present at the time of procreation, in unmistakable symptoms of the so-called secondary character, furnishing material capable of inoculating.

The following reasons entitle me to this categorical assertion: From Table I. (p. 283) it is evident that in one hundred and nineteen marriages, or other sexual relation, in which either the male or the female, or both, suffered from syphilis, all births resulting from these relations were carefully recorded and tabulated. This gives a total of three hundred and thirty syphilitic births in one hundred and nineteen cases. It is quite plain, partly from what has thus far been said, and will later be still more extensively illustrated, that in all these examples a great regularity is to be found; and that almost unexceptionally, from the first most intensely affected child until the last one but slightly affected, a regular uninterrupted decrease in the severity of the inherited dyscrasia is apparent. This regularity is so complete in one hundred and nine cases—consequently, in by far the greater majority—that not once do the slightest variations occur; for instance, a severely affected or viable child is never followed again by a still-birth, etc.; and only in ten cases did such variations appear in the intensity of the disease, which then could be partly attributed to mercurial treatment of the parents. But *never*, in all these three hundred and thirty births, did the birth of a healthy child take place between two severely diseased children, consequently, between the initial abortions and premature births, or between these and those badly affected but viable. On the whole, the birth of healthy children between two syphilitic sisters and brothers was only observed twice (Cases XII. and XVI.); but in both these this irregularity occurred only at the end of the otherwise regular succession of births, and with a transmission power in the parents of many years' duration, very close upon its extinction. In the second case, the syphilis of the parents was of ten years' standing, and four non-viable and two viable syphilitic children had already been born previous to the birth of the healthy child, which was the seventh, preceding a last unusually slightly affected one. In the first case, also, the healthy child was born between two fully viable and relatively mildly affected children, at the close of the series. For a long time previously in both cases, apart from the syphilitic cachexia and the traces of the past disease, no recent syphilitic lesions had made their appearance in the parents.

Apart from these two cases, the birth of healthy children between those syphilitic was never observed. All the other healthy children formed the last link in the chain of births, and in no case could we rightfully consider the duration of parental syphilis as being less than seven years; in the greater number, even, it quite certainly exceeded this period by many years at the time when, at the end of a series continually decreasing in intensity, the first healthy child was born.

If now, in one hundred and nineteen marriages, syphilitic, and in three hundred and thirty single, syphilitic births, the immunity of the child procreated just in the height of parental syphilis was never observed (although, in fifty-three cases out of one huudred and nineteen, one of the parents very certainly remained free from the disease), we can well say that there can be no question of a facultative inheritance of syphilis; *that much more rather inheritance necessarily follows during the course of syphilis which has been neither extensively treated with mercury nor become weakened through a long succession of years; and that the immunity of the child, if it on the whole occurs, must be reckoned, at all events, among the rarest exceptions.*

All the points thus far discussed relative to the transmission power in the parents, and all the definite conclusions resulting from these discussions, are of *equal value in relation to both father and mother;* neither have we succeeded here in establishing any real difference in the actual transmission (exclusive of the disturbances of pregnancy occasioned undoubtedly by syphilis in the mother) between male and female syphilitics.

All differences which in general exist—for instance, in the frequency of the transmission from the father or the mother, or in the varied duration of the actual power—have no internal physiological, but depend upon exclusively external, I might say purely social, grounds.

Relative to the *frequency of heredity*, my experience, which in this respect is in complete accord with that of Hutchinson, Rosen, Trousseau, Baerensprung, and others, recognizes a significant balance in favor of the father. For, in my seventy-six cases, in which no doubt existed as to the mode of inheritance, the father alone was syphilitic forty-three times, the mother alone ten times, and both together twenty-three times; accordingly, there results for the father sixty-six and for the mother thirty-three cases, therefore accidently just the double number for the father. The reason for this is the very simple one, that, in general, there are more syphilitic men than women, and that especially more men are syphilitic previous to their marriage, or other sexual relationship, than women. The most frequent occurrence of all is, that a man, inoculated a long time previously, consummates marriage without at the time having any inoculating lesions; the wife, as a consequence, remaining spared, while the paternal syphilis is inherited by an entire succession of children. The inoculation of the man happens much less frequently after marriage; but when it does happen, the wife, of course, most generally is also inoculated (twenty-three times); but, even under these circumstances, she may accidently escape (in my cases four times), and heredity follows then, also exclusively from the father. Cases in which the

mother alone is syphilitic at marriage are, upon the whole, very exceptional (in my cases ten times); and, among these, several (four) contracted the disease during their first marriage.

These circumstances, which in our field of study, have been derived chiefly from the smaller mechanics and better class of laborers, are in the higher classes still more favorable to the female sex; for the reason that, although the father is very frequently syphilitic before marriage, still they certainly contract syphilis much more seldom after this event, and the introduction of the disease into the family by the wife alone is to be regarded as of the rarest occurrence.

In relation to the *duration of heredity* we have similar conditions. The duration of the *power* to transmit is naturally the same in both sexes, and Baerensprung (*l. c.*) is in error when he regards it as of longer duration in women than in men. As the transmission power exists as long as the virulent stage of the syphilitic affection, so, consequently, could a difference in the duration of the transmission power between the two sexes only be possible by a difference in the duration of the disease in general—which, however, is asserted by no one. In truth, we find, in regard to the *actual duration* of heredity, differences again, which have a foundation analogous to the differences found in regard to the frequency of the same. In the relatively rare cases in which the mother alone transmitted syphilis, I found, in fact, a greater average figure, not alone for the duration of actual inheritance (from the birth of the first to that of the last syphilitic child), but also for the number of syphilitic births. From the two tables before given, we have, namely: for the father alone, three and a half years, for the mother alone, six, and for both parents simultaneously diseased, four and a half years, as the average number for the actual duration of transmission, in which a maximum of eleven and twelve years for the mother, and of eight years only for the father, is observed. A similar condition obtains, also, relative to the average number of births. This, again, explains itself simply from the fact that, in a great number of the cases in which the father alone was diseased, he had never married until several years after his inoculation, and, accordingly, the possibilities of a syphilitic transmission on his part falling within these years, were either without result, or, at least, such results did not come under our observation. On the contrary, in those cases in which the mother alone was inoculated, or else contracted the disease at the same time with the father, it took place for the most part after marriage; the series of births began, consequently, often immediately after the inoculation; and, as the possibilities of transmission from the beginning to the end were given free scope to, we have the greater number of years in favor of the diseased mothers.

Here is also, probably, the most appropriate place to properly set forth the views relative to a supposed *sterility of constitutionally syphilitic women*. The first reference to this subject I find in Behrend (1848), who doubts whether a woman with pronounced lues can conceive, although he himself, in later writings, speaks of repeated births in constitutionally syphilitic women. Mayer (*l. c.*) and Bednar (*l. c.*) state decidedly that a constitutionally syphilitic woman can never become pregnant; and the latter adds, that she only again becomes capable of impregnation when freed from syphilis. Schuller (1864) accepts this assertion in its entirety. Rosen (*l. c.*) believes only in a relative sterility, and bases his opinion upon the infrequency of births among prostitutes. Finally, Zeissl (1875) asserts that women who suffer with inveterate syphilis are generally sterile.

The assertion as to the absolute sterility of syphilitic women, which is really incomprehensible, requires no very serious consideration. A glance at Table I. is amply sufficient. As, also, against a relative sterility, those numerous cases, in which undoubtedly and positively syphilitic women conceive from the beginning of their disease year after year, speak forcibly enough; and it was by no means uncommon that they gave birth to six and seven children. The fact that prostitutes have but few children depends not upon syphilis as a cause, but upon other conditions. Neither has inveterate syphilis any perceptible influence whatever upon the fruitfulness of those suffering in such a manner. If, under this head, we are to include patients with tertiary lesions, we have demonstrated above how often women with tertiary syphilis conceive and bear partly syphilitic and partly healthy children. Should this question also comprise the absolute duration of the disease, we can only refer to Case XVI., in which births still occurred seven, eight, ten and twelve years after the beginning of syphilis in the mother. In another case, a woman, who had been affected seven years, and suffered from obstinate psoriasis palmaris, conceived three times in three consecutive years.

The assertion, then, as to the absolute or relative sterility of syphilitic women, has also, in facts, the most striking refutation.

(*To be continued.*)

ASYSTOLISM.

A LECTURE DELIVERED AT THE HOTEL DIEU.

By M. Raymond,

PROFESSOR AGREGE OF THE PARIS FACULTY.

Gentlemen:—I wish to call your attention again, to-day, to two patients, one of whom died a few days since. The autopsy was made before you, and as you remember, there existed chronic lesions of the lungs.

Again, toward the close of life the patient presented somewhat remarkable delirious symptoms, which merit careful consideration. The other patient, now before you, has heart disease, and presents also chronic pulmonary lesions. I will commence my lecture by the consideration of her clinical history.

The patient is thirty-nine years of age, and entered the hospital August 30th. She suffers, as you observe, from intense dyspnœa. The respirations are short and very frequent, fifty-two per minute. The face presents a generalized yellowish tinge, but the cheeks have the bluish coloration of cyanosis, rendered more evident by the jaundiced color of the rest of the face. The eyelids are œdematous; the neck appears tumefied; the lips have a well marked, bluish, cyanotic aspect. The venous system is dilated over the entire body, in the neck, at the upper part of the chest and in the hands and feet, which are cyanosed and cold. The lower limbs also are considerably swollen and œdematous; all the natural prominences have disappeared, and the slightest pressure with the finger causes pitting. The patient complains of vertigo and ringing in the ears. At night she is obliged to remain propped up with pillows, and enjoys but a broken rest, for her slumbers are disturbed by terrifying dreams. From time to time she suffers from intense pain in the right hypochondrium. This pain, not limited to any special point, is augmented by pressure over the hepatic region and extends at the back to the right shoulder. The pulse is small, miserable and irregular, hardly perceptible, and sometimes intermittent. The heart impulse is diminished, and sometimes even it appears entirely absent, or at least so feeble as to be scarcely perceptible.

The cardiac dullness is somewhat augmented transversely. The heart sounds are so feeble as to be distinguished only with difficulty, but

there is no evidence of murmur. The second sound is more marked than usual over the pulmonary artery.

There is no asystolic murmur at the right of the sternum or near the epigastric region. The jugular veins are prominent, but there is no venous pulse, nor is there any trace of hepatic pulsation.

The patient is not only in a veritable state of orthopnœa, she has also abundant muco-purulent and yellowish expectoration.

The methodic examination of the chest gives the following results: Over the sub- and supra-spinal fossæ on the left side there is almost absolute dullness on percussion over a space of about fifteen centimeters. At the central part of this side of the chest the sound is normal, perhaps slightly tympanitic; at the extreme lower part is a narrow zone of dullness.

Percussion over the anterior aspect gives the same results as posteriorly; dullness at the upper part of the chest, but normal sound over the remainder. On the right side of the chest the *sonority* is normal over all the superior part, before and behind; there is a zone of slight dullness at the inferior part posteriorly.

On auscultation, tubular breathing is found on the left side, at the points where dullness is most marked; it is most evident with the inspiration.

There exists, also, bronchophony at these points, but no rales are present, even when the patient coughs. On the contrary, over the rest of the chest sonorous and sibilant as well as sub-crepitant rales are found. These last are most marked inferiorly and particularly on the right side.

Anteriorly, blowing respiration is found under the left clavicle, and rales similar to those detected posteriorly, but much less numerous, are found over the remainder of this aspect of the chest.

The abdomen is soft, somewhat tympanitic and painful in the hepatic region; the tongue is normal; appetite and digestion good, and but slight tendency to constipation.

The liver, manifestly augmented in volume, extends a space of two finger breadths below the false ribs; the spleen also is somewhat enlarged. The urine is dark-colored and scanty, but presents no traces of albumen.

When she entered the service, her morning temperature was normal, 37.6° C., the evening temperature being always somewhat higher, about 38° C.

According to the patient's very lucid statement, there exists no hereditary predisposition to any particular disease. When fifteen years of age she suffered from a violent attack of acute articular rheumatism, affecting all the large joints. The attack lasted two months, and

since that period she has frequently suffered from slight rheumatic pains, particularly when fatigued, and these pains were accompanied by palpitation of the heart. At 22 years of age she had a slight attack of jaundice, lasting five weeks, and ten years later a second attack, of much longer duration. It was at this period that she commenced to cough, and the limbs for the first time became swollen. Since then she is much subject to similar symptoms, œdema of the limbs and repeated attacks of bronchitis, which lasted four months, without affecting her general health.

When respiration became too painful and the limbs very much swollen, she entered some hospital service, generally during the month of April, and after fifty or sixty days' sojourn she was able to leave the hospital, apparently cured, and again take up her daily labor until the same symptoms supervened again.

On the 12th of August, these symptoms appeared more formidable than ever before, and were accompanied with considerable hæmoptysis; about two large glassfuls of red, spumous blood were expectorated; this was the first attack of hæmorrhage the patient experienced. For the last six months the menstrual flow has been arrested. Such, then, is the clinical history of our patient; it now remains for us to interpret the signs and symptoms observed.

You have recognized, with great facility, that the patient is in a condition of asystole; as to this fact there is no room for doubt.

But is the term asystolism or asystole a good one? Is it sufficiently clear, regarded by the light cast on the subject by contemporary research? I do not think so. Beau, who first used this term, said: "We give to these symptoms the name of asystole, comprising under this denomination, also, the insufficiency of the systole, which is the point of departure, and the sole cause of the asystolic state."

The following objection may be urged against this theory: if such be the case, how does it happen that asystolism is not observed in cases where the heart alone is affected, as, for instance, in the form of myocarditis observed in typhoid conditions. Is it not well known that the heart beat is frequently strong, although the pulse be feeble? And, no matter how feeble the action of this organ, is it not always sufficient to dilate the arteries? How can the multiplied visceral dropsies in asystolism be explained, unless we admit a feeble state of the vessels themselves, which have become incapable of properly emptying the encumbered capillaries, because they are, like the heart, in a state of degeneration? These reflections, according to M. Peter, are true, clinically, and physiology, by demonstrating the reciprocal action exercised by the heart on

the vessels, shows that the new theory is well founded. I would advise you to read, on this subject, the interesting pages devoted by M. Vulpian, in his work on the vaso-motor system, to the relations existing between the heart and the blood-vessels; you will be able then to understand why, since there is physiological reciprocity, there must necessarily exist morbid reciprocity.

At every point of view, the term cardio-vascular asthenia, proposed by M. Rigal, is preferable to asystole, and as this author has remarked, the heart beats may be frequent, unequal and irregular, without cyanosis, dyspnœa, congestions or dropsy; it is the condition to which M. See has given the designation arythmia.

If the peripheral circulatory apparatus is normal and the heart diseased, the general circulation may remain good; but if the lesion exists in the small vessels, the slightest trouble in the action of the heart will provoke cardio-vascular asthenia and all its consequences Some patients with very slight cardiac lesions have all the phenomena of asystolism; while others with considerable disease of the organ do not suffer from them; because the first are young and the peripheral circulatory system is in good condition and capable of extraordinary resistance; the others, on the contrary, are aged, at least as regards their blood vessels, which are hard, atheromatous, and in a degenerated condition. With such a condition, one may easily understand why, when the heart becomes feeble, from whatever cause, the symptoms of asystole suddenly supervene. M. Peter has, in his clinical lectures, called particular attention to these facts.

Remember, then, that it is necessary, particularly when forming a prognosis, to examine at the same time, and with the greatest care, the condition of the peripheral circulation in conjunction with the state of the heart itself.

Our patient has invariably suffered, at the debut of her asystolic attacks, from pain in the hepatic region; on two occasions she has had jaundice. This happens frequently, and when a large number of patients with cardiac disease are interrogated, it will be found that the mode of development of the symptoms due to the cardio-vascular asthenia is always the same for the same patient. You have probably noted that, though there is considerable œdema, no albumen is found in the urine of this patient, and no symptoms of cerebral disturbance are present. The clinical history of the asystolic attack may vary, and does vary much in different patients; sometimes there is predominance of the indications toward some particular organ, and in such case the symptomatology proper to the organ most affected dominates. This fact, first brought to notice by M. Grancher, is of interest.

We should now seek for the point of origin of the very marked cardio-vascular asthenia observed in this case. Modern research has brought to light many new causes capable of inducing asystolism, and I will briefly enumerate them.

Asystolism may be: 1st. Of cardiac or cardio-vascular origin. In such a case, a direct perturbation of the heart itself is the primary cause. Asystolism is a phenomenon which supervenes suddenly, and is generally due to a chronic lesion of the organ.

Much less frequently observed in aortic disease, asystole may come on suddenly, without obvious pre-existing lesions of the heart or vessels, in patients debilitated by the habitual abuse of alcoholic stimulants, or living under unfavorable hygienic conditions; the heart is, in such individuals, overworked.

Under this category may be classed M Debove's case, where an asystolic attack supervened on violent palpitation in a patient with exophthalmic goitre. Asystolism is also met with: 2. In pulmonary diseases. Very rarely observed in acute affections, although cases have been reported of its occurance in acute pneumonia, by Graves and Grisolle, and in acute phthisis, by M. Parrot, it is frequent in the chronic diseases of these organs, in emphysema, chronic bronchitis and pulmonary sclerosis. It also occurs: 3d. In gastric and hepatic affections; these clinical facts have been recently demonstrated by M. Potain. This teacher has shown that, if the heart reacts on these organs when compensation is broken, reciprocally, the disease of these two organs may induce asystole, by acting on the right heart, probably, through the agency of the great sympathetic and pneumogastric systems. 4th. Asystolism is observed in kidney diseases, particularly in interstitial nephritis. In this last, three factors are at work in producing the symptoms; the generalized endarteritis, hyperplasia of the connective tissue of the heart and the gastric derangements so frequent in Bright's disease. 5th. In functional nervous diseases, as in hysteria, I know of no case where asystolism occurred, although the attacks of cardiac palpitaion are frequently very violent, without, of course, any organic disease of the heart. M. M Peter and Letulle have, however, recently observed, during an attack of acute articular rheumatism, a veritable inflammation of the pneumogastric, the neuritis being characterized by pain on pressure along the side of the sterno-mastoid muscle, in the epigastrium and at the internal portion of the left intercostal space, and accompanied by a marked asystolic condition, characterized by general lividity of the cutaneous surface, the lips cyanosed and bluish, the conjunctiva yellow; the pulse small and very frequent, 140 per minute; intense pulmonary congestion, etc. M. Huchard has observed somewhat similar phenomena in patients suffering from violent

attacks of angina pectoris. 6th. In vascular diseases asystole is frequent, as in atheroma of the arteries, and other forms of vascular degeneration.

Amomg all the causes of the asystolic condition, some will not come at all into consideration, in explaining the syptoms observed in the case before us.

Nothing in all the syptoms to which I have called your attention points to any renal, gastric or hepatic disease.

There is nothing to prove either that the asystolism is of nervous or vascular origin. The woman is young, she has no atheroma of the peripheric arteries, and no bruit over the aorta. We remain, then, in presence of two possible causes of cardio-vascular asthenia, the heart or the lungs. In this particular case we have the facts furnished by the patient, concerning the existence of anterior attacks of rheumatism, of palpitation, œdema of the lower limbs, etc., all of great importance.

When, in connection with these, we have repeated attacks of asystole, diminution of the præcordial impulse of the heart, transverse augmentation of the cardiac dullness; notwithstanding the absence of valvular murmurs, which have disappeared on account of the feeble energy of the heart's action, you will conclude that the paroxymal dyspnœa is of cardiac origin, for the pulmonary lesions are not really of sufficient extent, and are manifestly of too recent origin, to be regarded as the cause of the cardio-vascular asthenia.

What are the signs of pulmonary disease present? The signs discovered on percussion and auscultation are sufficient to prove the alteration of the pulmonary parenchyma, but this alteration does not appear to be of the same nature everywhere.

There are evident signs of bronchitis, such as sonorous and sibilant rales and the expectoration; there is also œdematous congestion of the two inferior lobes, characterized by slight dullness on percussion and fine subcrepitant rales, but besides this the apex of the left lung seems to be the seat of a special alteration. You have noticed how marked was the dullness and over how large a space it was evident.

Auscultation over these points demonstrates the existence of rude, blowing respiration, together with exaggerated *sonority* of the voice; in a word, all the signs of pulmonary induration are present.

Of what nature is this induration? Is it a case of ordinary phthisis localized at the apex? I do not think so, for, habitually, tuberculosis is disseminated to the right and left, and in this case the general symptoms and the evolution of the malady are little in accordance with such a supposition. Can it, then, be a case of primary and unilateral cancer of the lung? This supposition is still less tenable, for in such a case there would exist almost certainly infection of the lymphatic glands, or

at least there would be intense pain with sanguinolent sputa, and perhaps symptoms of compression. There are no symptoms of bronchial dilatation, notwithstanding that our patient had been for years subject to attacks of bronchitis. The existence of bronchophony and exaggerated thoracic vibrations, as also the nature of the cough, are against the existence of localized chronic pleurisy.

In fact, chronic pneumonia would alone seem to explain or be in unison with the stethoscopic phenomena. And, in effect, in my opinion, there is simply a fibrous metamorphosis of a part of the superior lobe of the lung.

It is much more difficult to determine whether this fibrous metamorphosis is the result of lobar-pneumonia or of broncho-pneumonia. Against this last supposition is the fact that there is no bronchial dilatation; a symptom which, according to Charcot, is characteristic of chronic broncho-pneumonia. It is true that there is nothing in the morbid antecedents of the patient, although she has had frequent attacks of bronchitis, which would permit us to affirm that she has formerly suffered from acute pneumonia. Nevertheless, it is from this order of ideas that the causation of chronic pneumonia must be sought. It is well known, in effect, that among the best demonstrated causes of this malady are those which render the system feeble, such as old age, diseases which induce cachexia, as malarial poisoning, albuminuria, alcoholism and diseases of the heart. As regards this last the authors are not all agreed; some considering that diseases of this organ frequently induce chronic pneumonia, others claiming that there is not sufficient proof of this assertion.

I am of opinion that there exists no very plausible reasons for eliminating organic diseases of the heart from the causation of chronic pneumonia. The case at present before us seems to me conclusive; and last year, in this same amphitheatre, I presented the lungs of a woman, forty-four years of age, asystolic, with disease of the mitral valves. Anteriorly she had had an attack of true acute pneumonia. At the autopsy the inferior and superior lobe of the left lung were found the seat of gray induration; the pulmonary tissue was hard and elastic, entirely impermeable to air, sinking immediately in water. This part of the lung, with the pleura covering it thickened and fibrous, appeared retracted. Microscopic examination demonstrated that the walls of the alveoli were considerably thickened by fibrous tissue; a few alveoli here and there were filled with a granular substance. There was no trace of bronchial dilatation, nor of cavities of any kind. I have observed two other very similar cases, and I think that in certain cases organic heart disease has a very evident pathogenetic influence.

However that may be, it is certain that in the present case the

pulmonary induration of the left apex does not suffice to explain the asystolism. On the other hand, some of the signs indicate recent pulmonary alterations. As I have already said, the asystole in this case is of cardiac origin and this is the fifteenth attack from which she has suffered.

What is the organic heart disease in her case? It is from the present clinical condition of the patient and from the mode of evolution of the symptoms that a response to this question must be sought. Notwithstanding the absence of murmur, all the symptoms point to mitral disease. The general symptoms, partial and generalized cyanosis and œdema, and the local phenomena, the small, miserable, intermittent pulse, the absence of souffle, all are proper to mitral affections. I consider, then, that we have here a very grave case of mitral disease. The prognosis is extremely serious, on account of the accentuation of all the phenomena of the asystolic attack, and it is to be feared that this will prove the last.

You have observed the treatment I instituted: I first recommended the most absolute repose, physical and mental. On account of the marked feebleness of the heart, I have given wine, rum, coffee, and easily digested aliments, as the appetite was still good. As heart tonics I administered 1-30 of a grain of digitaline, in granules, per diem with subcutaneous injections of ether as an excitant. To relieve dyspnoea, I applied, several times, dry cups and sinapisms to the chest. Dry frictions over the lower limbs were practiced. I gave diuretic drinks, milk, and on account of the constipation, a few purgative enemata. I have not bled the patient, although general bleeding sometimes affords relief, because she is so weak that I feared to induce syncope.

[This patient died some days later, and the lesions found at the autopsy were as follows:—

The heart was enormous, the left auricle being as large as the fist of an adult. There existed typical mitral insufficiency, with considerable hypertrophy of the ventricle.

There was œdematous congestion of the inferior lobes of the lungs and chronic inflammation of the mucous membrane of the bronchial tubes. There existed fibroid sclerosis of the superior lobe of the left lung.

No traces of chronic pleurisy, but the pulmonary tissue was hard and resisting, sinking in water. On section the exposed surface is brown and dry, traversed by thick, dark lines.

Histological examination shows the walls of the alveoli much thickened by fibroid tissue. There was no bronchial dilatation, no trace of tubercles. The liver was congested and hard; the spleen also indurated and retracted. The kidneys and other abdominal organs were normal. There was no cerebral lesion.]

I will speak more fully concerning the other patient in a future lecture. It was a case of chronic pleurisy with sclerosis of the lung; the patient presented toward the end of life a condition approaching asystolism with violent delirium, necessitating the application of the straight-waistcoat. At the autopsy we found, as I had predicted, considerable cerebral œdema, induced by the asystolic condition. There existed also numerous adhesions between the parietal and costal layers of the pleura, and almost complete sclerosis of the lower lobe of the right lung; the heart was normal.—*Medical and Surgical Reporter.*

EDITORIAL.

"And noting, e're they fade away,
The little lines of yesterday."—Wordsworth.

HAHNEMANN; ADIOS.

The *New York Medical Times*, a monthly journal of Medicine, Surgery and the Collateral Sciences, March, 1882, lies upon our table. It is a journal very much after the style of the *N. Y. Medical Record*, and has twenty-three pages of advertising matter. The *Times* is devoted to the interests of the homœopathic fraternity, though the word homeopathic does not appear upon its title page and only three of its advertising pages are devoted to homeopathy and its colleges, institutions, pharmacies, etc.

We refer to this journal for the purpose of briefly commenting upon its editorials and an article by H. M. Paine, M. D., of Albany, N. Y., entitled "Removal of Barriers to 'Old School' Recognition." This article is a review of one written by T. F. Pomeroy. M. D., and as the papers give us a clear view of the present standing, and views of homœopathy, we venture to place them before our readers.

It is easy to see that homeopaths no longer wish to be blind followers of Hahnemann, as they boldly proclaim what they would not have ventured to proclaim ten years ago: "that dynamization is a 'rickety theory,' repudiated by the most prominent homeopathists of the present day, men of long practical experience and of ripe scholarship, men who

are in every respect capable of judging correctly, because of actual investigation." Again: "that the worthless chaff of dynamization, one of the most prominent 'medical illusions' that ever took possesion of the profession will be remembered only with jesting and mockery." The writer suggests that all state and local societies adopt "a declaration to the effect that all practice with potencies higher than the twelfth be classed as dynamic." If the trillionth or the hundred billionth part of a grain be classed as dynamic, why not the billionth or the millionth? If it is not now deemed prudent to rely on the three hundredth potency, it is safe to believe that the sixth and the third will ere long be discarded. As for psora being the cause of nearly all chronic diseases, bold is the homœopath who will to-day assert it. The law of similia itself, the great fundamental law of Hahnemann is thus treated of:

"There are two main principles in therapeutic science, *contraria* and *similia;* both are natural. To assume that either is unnatural, is, to say the least, unwise, because untruthful.

"The educated homeopathist differs in no material respect from the educated regular physician. He recognizes the fact that there is a truth in the dictum *similia similibus curantur*, but scouts the universal applicacability of the dogma as a law of cure.

"The law of similars is just as universal as any other *law*, reaching no farther than its own impassable bounderies. We have disclaimed over and over again a belief in it as a universal law, insisting, however, that it is a principle of great value in therapeutics and should receive the attention and only the attention which its merits demand."

Thus, then, are the three great laws of homeopathy's founder disposed of: the law of similars which he laid down as being the only law of therapeutics—the law that Psora was the cause of most chronic diseases —and that of dynamization ruthlessly attacked as "a rickety theory."

What then is left? Simply the claim that similia is a law which has its limits and which cannot be universally applicable; and Hahnemann thus shorn of his greatness is virtually admitted by his so-called followers to be simply a man, who, in his day, stated as facts, propositions now found to be untenable and "rickety." It should not be forgotten that he wrote: "Homœopathy sheds not a drop of blood, prescribes no

emetics, purgatives, laxatives nor sudorifics. It removes no external disease by local applications. It orders no medicated baths nor enemas, and makes no use of blisters, sinapisms nor setons. It objects to salivation, and does not scar the flesh to the bone by moxa nor heated iron. The homœopath avoids all mixtures, and needs no opium to soothe pain."

The journal before us says: "The rational homœopathist does not allow his patient to endure the agonies of angina pectoris, when he knows that amyl-nitrite will relieve them. He does not refuse chloroform during the passage of a calculus any more than that of a fœtus." This use of palliatives cannot be homœopathy as defined by Hahnemann, and if their use is upheld and countenanced, is there anywhere to be found a consistent homœopathic practitioner?

The *Times* goes on to say: "To Hahnemann for his able and scientific exposition of the principle of *similia* we award all praise, but we are not called upon, nor do we adopt all his theories and yield an unquestioning, slavish submission to all his views, nor should we be made responsible for them. The pure Hahnemannians who bow in blind submission to the great master, and endorse every word he uttered as law and gospel, can almost be counted on the fingers, while the great army of homœopathic physicians is numbered by thousands."

Having thus dethroned their once revered leader, we find them even disclaiming the word homeopath in the following language: "We may well consider the desirability of doing away with our distinctive adjective thereby avoiding the suspicion of 'trading upon a name.'" And the article closes with the following paragraph: "The display of the title 'Homeopath' upon signs is rarely met with in these parts (N. Y.), and its use, we will admit, is only for purposes of notoriety, and should be abandoned by such as have any degree of appreciation of good taste and of the dignity of that title which needs no modification, viz.: Doctor of Medicine.

"With this sentiment we can heartily agree and in fact taking it for true that the distinctive barriers between medicine and homeopathy as taught by its founder, have been overthrown; we can see no ground for the retention of the word homeopath, and it was doubtless also the opinion of the New York Medical Society when it adopted at its late

annual meeting, the following: "Members of the Medical Society of the State of New York, and of the medical societies in affiliation therewith, may meet in consultation legally qualified practitioners of medicine. Emergencies may occur in which all restrictions should, in the judgment of the practitioner, yield to the demands of humanity."

K.

CORRESPONDENCE.

OUR NEW YORK LETTER.

NEW YORK, March 7th, 1882.

TO THE EDITOR OF THE ROCKY MOUNTAIN MEDICAL TIMES:

Thinking this evening over matters of interest, I am tempted to write you a word about THE NEW CODE OF ETHICS, adopted at the last meeting of the New York State Medical Society. I feel that all your readers will be interested in this topic, and if I do nothing more than state the facts as they exist, I am sure the brethren in the West will sympathize with the brethren in the East. I am quite sure too, that by the time this letter is published you will have seen the official report of the proceedings.

The feeling in New York City at least, is, that we as a profession have long outgrown the old iron-clad code of the American Medical Association, and that if that venerable body of good livers chooses at the next meeting to excommunicate us, we are prepared for the excommunication.

One evening a prominent physician, who does a large consulting practice, was discussing this matter of consultation with homeopaths and in reply to a question whether he would consult with them replied: "there are only two classes of men in this city who decline, viz., young men and fools."

We are convinced that if ever homeopathy is to be broken down, it must be done by meeting it on broad ground. The ignoring plan has failed. The public—our patrons—does not ignore it, and it is useless any longer to cling to this mode of attack.

At the State Society some representative men from the city were present. As a matter of fact, a great number of such men were not present. The question has been asked me no longer ago than this morning whether many of the representative men of New York voted for the abolition of a

code. A great many representative men do not attend State Societies, and when they do they generally skip out of any thing that does not smack of conservatism. They like to be non-committal, and hence you never find *many* of this class arrayed for or against any measure that seems at all revolutionary.

The substitute offered by Dr. Roosa, *i. e.*, that we have no code, was accepted by a vote of 39 ayes, to 37 nays, "but was declared lost because a two-thirds vote is required to amend or alter the by-laws." That showed the drift of opinion and then the new code was adopted by a vote of 52 against 18. The question will come up again, and the time will come, as Dr. Roosa says, when we will know no code save the unwritten code which compels a man to be a physician and a gentleman.

Conservative old Philadelphia as we expected is rising her ominous voice against this step; but then we can love Philadelphia with all her faults and her grumblings.

At the present time we are having a rivalry in journalism that is really interesting. THE TWO NEUROLOGICAL QUARTERLIES have just appeared, and a neurologist has no difficulty in disposing of any Mss. he may have on hand

Dr. Morton is the editor of the *Journal of Nervous and Mental Disease*, lately edited by Dr. Jewell of Chicago, and Dr. Mc Bride is the editor of the *American Journal of Neurology and Psychiatry*. The competition is very lively, and the neurologists are arrayed on the sides to which their preferences incline them. In the first heat, to borrow a turf term, Dr. Morton has distanced Dr. Mc Bride so far as the "get up" of the journal and the number of pages of reading matter are concerned. Dr. Mc Bride in the haste, it seems, to get the short in the race, got out his journal too early and has the smaller number. Of course all general practitioners, and especially all readers of the TIMES ought to take both of these neurological journals, for they contain the full value of the paltry $5 subscription. Indeed, there is an economic feature about journals in general, that the general practitioner does not seem to grasp. He is always crying out against all new medical journals, saying, we have too many now—more than we can read, etc. My dear reader, you should disabuse your mind of this fallacy as soon as possible. The more journals you have, of course I speak within bounds, the more knowledge you will get; the more skillfully you will treat your patients, the more money you will get.

"And much seed fell by the way side," the parable goes on to say (I am quoting now as my memory serves me), and naturally much seed had to be scattered broadcast. It is a mighty poor copy of any journal that does not give any man, however carelessly he read it, some good

point by which he more than doubles the year's subscription price. So don't be penny wise and pound foolish. Support liberally all the efforts at medical journalism in your part of the country. Give aid, and comfort and money to all men who are striving honestly to build up the profession, to all who are striving to sow seed, no matter how many tares may spring up to choke out the wheat.

And while I am on this topic let me urge the young men who are toiling in medical literature, and the old ones too, who are never so proud as when they can feel that they are encouraging the younger men in good solid work—to subscribe for THE INDEX MEDICUS, a most useful journal and a most invaluable one to any man who contemplates writing up cases for publication, or writing articles on any medical topic. This publication, as many of your readers must know, is, a complete index of all new books, new papers, new cases on all subjects every month. The classification is excellent, and at a glance one can see what is new as collected from thirteen different languages. The publishers, Leypold & Co., of New York, have had a most discouraging experience for the past few years, and Dr. Billings of the Surgeon General's office in Washington, has the editorship. His name and the reputation he has, and well deserves, for illimitable work, should be enough to make this one of the most popular journals in the whole country.

I had intended, Mr. Editor, to write a little about the medical societies in the city. The papers recently read: the hospital work, etc., but already I have written too long a letter, and must promise to give you what is of interest in a future communication.

V. P. G.

OUR LONDON LETTER.

LONDON, February 18, 1882.

Last week, Dr. Frankland, the well known chemist, delivered a lecture at the Royal Institution, on the Climate of Town and Country, with special reference to the cause and remedies of London fogs. As to fogs, the lecturer stated that in London they depended for their well known offensiveness upon the products given off by bituminous coal, 30,333 tons of which were burned in London every day. This coal sent forth watery particles, which became condensed and covered with a tarry substance, also the product of coal. He stated that there were at least 1,800,000 fire-places in London, and as it was practically impossible to change all these, the only remedy he could suggest was to make the

burning of anthracite or smokeless coal compulsory by law, within the municipal limits. The mortality directly due to London fogs, is indeed, enormous, and calls for earnest attention from every sanitary reformer.

The Registrar General's weekly returns shows that the combined effects of dense fog and low temperature can raise the metropolitan death rate to a point seldom reached except during the prevalence of severe epidemics. In the week ending December 20th, 1873, following the memorable fog which was so fatal to the beasts at the cattle show; the metropolitan death rate rose to 37.5 per thousand. In the week ending February 7th, 1880, following a week of intense frost and dense fog, the rate rose to 46.7; and again last week, influenced by the dense fog of the previous week and a few days of low temperature, the exceptional death rate of 35.3 was recorded. As regards diseases, the most fatal effect of the fog is, of course, shown in diseases of the respiratory organs. They are least fatal among infants under one year of age, and most fatal among elderly persons. As showing the pernicious nature of London fogs, it may be stated that last week the mortality of London was 10.1 per 1,000 higher than the average rate in twenty seven provincial towns. As a rule, it is a trifle lower, for in ordinary weather, London is perhaps the healthiest town in Great Britain.

As showing the very crowded condition of the medical profession in this country, I may mention that to an advertisement which appeared lately for the appointment of surgeon to the great western railway, more than 600 applications were sent in. The appointment was worth about £3,000 a year, but conferred no special clinical or social advantages. The choice of the Directors fell on Mr. Bond, Assistant Surgeon to Westminster Hospital. Mr. Bond has already made his mark as a medical jurist. He has been employed by the Police in almost all the great criminal trials of the last five years. In the approaching trial of Dr. Lamson for poisoning his brother-in-law, Mr. Bond will be, in conjunction with Dr. Stevens and Dupre, the leading witness for the Crown. He has not written much, but he is an excellent witness in the box, clear, concise, and quite impregnable to the severest cross-examination.

At a recent meeting of the Obstetrical Society of London, the President, Dr. Matthews Duncan, called attention to a new method of keeping sponges, tents, instruments, etc., aseptic in the vagina. The President had used it with success in inducing premature labor and in other operations. It consists in smearing them with "salicylic cream," which is composed of one part of powdered acid to four or five of glycerine or vaseline.

Sir Erasmus Wilson, the well known dermatologist, whose name is also connected inseparably with the bringing to London of the Egyptian

obelisk, has recently founded and endowed a class of Pathological Anatomy in the University of Aberdeen. The Senatus of the University has just received from him the sum of $50,000 for this purpose. The yearly revenue is to be bestowed as a salary on the Professor, together with the fees paid by the students attending his lectures. The whole of the professor's time is to be devoted to the duties of the chair, and he will not be permitted to engage in private practice. The appointment of the Professor is to rest with the Crown Sir Erasmus is not a hale and hearty septuagenarian. He is a bachelor, and one of the highest masons in England. His dinners are well known as some of the best in London. He has acquired a large fortune by his specialty, and his success is grudged to him by no man. Throughout a long and brilliant career, he has ever acted honestly towards his professional brethren, whose esteem and confidence he has possessed for over half a century.

The unhealthiness of Cannes this year has been a serious loss to the prosperity of the Riviera. Typhoid fever appeared there at the early part of the season and rapidly claimed several victims. A sort of panic soon took possession of the visitors, and there has been a general stampede among the fashionable English and American colonists, to Mentone, Bordighiera and Pegli. By the way, a cheap sanitarium has just been opened in the latter beautiful little village, which can scarcely fail of success. The price for board and lodging is 75 cents a day, which is not dear for a place where the sun shines all the year around, and where oranges, myrtles and geraniums may be plucked, as I know from personal experience, in mid-winter. At Cannes, matters became so bad that Dr. C. J. B. Williams, the well known writer on diseases of the chest, was asked by the resident English and American Physicians to make a public statement on the subject. Dr. Williams has long retired from the active practice of his profession, and has made Cannes his home. The gist of his report is that, though there has undoubtedly been an increase in the number of cases of typhoid and in the number of deaths this season, it has not been to such an amount as to justify serious alarm, or warrant the absurd reports which have been spread abroad. According to Dr. Frank, whose practice lies largely among the English visitors, the fever was distinctly of the typhoid or pythogenic type. Cess-pools imperfectly emptied, and without any, or with faulty ventilation, were the evils commonly discovered. The Vice-Consuls and the Mayor of the town have taken the matter up energetically, and it is said that a permanent sanitary bureau will shortly be established to attend to all matters of health It seems almost incredible that after the millions spent in magnificent hotels, in Casinos, and in beautifying the town generally, Cannes should have no complete system of drainage. Such, however, is the fact, and it is but

a poor excuse in this age to say that there are considerable physical difficulties to be overcome, as regards outfall and so forth. Unless they are overcome and that speedily, prosperous and fashionable Cannes will soon lapse into the fishing village stage in which it was when Lord Brougham first called attention to its beautiful scenery and unrivalled climate.

The health of the Queen has for some time been such as to cause considerable anxiety to Sir William Jenner, her physician in ordinary. Acting on his advice she will leave London sometime in April, and will remain about six weeks at Mentone. I can state authentatively for the information of your readers, that there are no serious symptoms whatever, and consequently no cause for alarm. The Queen comes of a long-lived family, her grandfather, George III, having enjoyed the longest reign of any monarch in English history (1760–1820). Her Majesty of late has grown enormously stout, and has shown an increasing disposition to withdraw from all active duties. She does, and has done for years, everything by deputy, and is rarely seen anywhere in public. The "Lancet," acting doubtless on a hint from Court, proclaims with much unnecessary and effusive panegyric that the Queen is "over-worked" and that "the burden of managing the affairs of the greatest empire known to history has told upon the royal constitution," and much more to the same effect. It is better in every case to tell the truth. The Queen has practically nothing whatever to do either with court ceremonies or with affairs of state. The Prince of Wales looks after the former, Mr. Gladstone after the latter. She is going away from London simply because she dislikes the bustle of the season, and especially it is said dislikes the Prime Minister and the present liberal cabinet. It has been decided that she shall visit Mentone instead of Cannes on account of the momentary unhealthiness of the latter. Every precaution will, of course, be taken to see that drains, cess-pools and drinking water are all that they should be. It is said that a wealthy American has already offered to place his villa at her disposal. She will travel strictly incognita, assuming a German title *pro re nata*.

At the last meeting of the Royal Medical and Chirurgical Society, Mr. Girdlestone of Melbourne, Australia, had a paper advocating the use of the tail tendons of the kangaroo as ligatures instead of catgut or silk. He described his method of preparing them, and claimed that they possessed the advantages of great strength, of cleanliness, and of not slipping when tied in a reef knot. On the other hand it was stated by some who had tried them, that they were liable to undergo too rapid absorption when placed among living tissues. This was a serious objection as it militated against their use in capital operations. One gentleman attributes the fatal termination of a case of gastrotomy to their use.

They became absorbed on the third day, and allowed the stomach to fall back into the the abdominal cavity. On the whole, the sense of the Society was decidedly against the use of kangaroo ligatures; the disadvantages more than counterbalancing the advantages.

With the death of Sir Robert Christison, the last link that bound the present generation of Edinburgh medical men with the brilliant names of the past has been severed. Sir Robert was a contemporary of Symes, of Simpson, of Gregory and of Allison, all well known names in the roll of Edinburgh worthies. He was practically the founder of medical jurisprudence in Great Britain, which, before his day had been little more than a science of guess-work. He gained his knowledge from Robiquet and Orfila, at a time when the Paris school was far in front of any school in Europe. His work on prisons, though somewhat superceded by later works, marked in its day the commencement of a new epoch. He died suddenly, though not unexpectedly, in his eighty-fifth year. He was the only professor in the annals of Edinburgh and perhaps of Europe, who had occupied a chair fifty years consecutively. He was engaged at different periods in all the great criminal cases, though perhaps, the two most remarkable were the cases of Burke and Hare and of Galmer. The two former were hanged for a long series of deliberately planned murders, undertaken with the sole object of selling the bodies of their victims to the surgeons for dissection. The latter was the first case in which strychnine had been used criminally as a poison. There was an immense conflict of scientific evidence, and it was not without considerable difficulty that Galmer's guilt was eventually established. Sir Robert Christison retired from practice at the age of seventy-eight, yet, in spite of his fame he was over fifty years old before he attained to a really lucrative practice.

LITTON FORBES.

15 GREAT RUSSEL ST., COVENT GARDEN.

REPORT ON DISEASES OF CHILDREN.

By Milo A. Wilson, M. D., Denver.

Alcohol in Diphtheria.—Dr. H. N. Burr, of Walworth N. Y., in a communication of some length upon this subject, *Med. and Surg. Rep., Jan'y 14th, 1882.*, finally gives the details of five cases, three of them his own, the first patient being himself. After the usual initiatory symptoms and the appearance of several large patches of false membrane covering both tonsils, he began taking two large tablespoonfuls, of whisky every hour, for twenty-four hours, when he began to feel better and discontinued its use. The membranes came away, but it was several weeks before he became strong and well.

The second case was that of a boy six or seven years old, manifesting but little constitutional disturbance, but with much deposit covering the throat and tonsils. He was given whisky, two teaspoonfuls every hour, until his system responded to its influence (stupefaction), when the membranes were cast off and he began to improve. Some paralysis of the eye-lids, slight strabismus and an inability to hold up his head properly from muscular weakness, were present for a few weeks, when he began to recover his strength.

The third patient was his son, aged twelve years, who was promptly placed upon the same remedy, and this continued "until his system came under its influence, when the membrane would come off in flakes, leaving a deep ulcer on the tonsil; but the membrane did not form again and he recovered although weak and trembling for some days." Potass. Chlor. was also employed, both locally and internally.

Physicians should give special attention to the throat when first called, and when convinced of the nature of the disease, begin the use of alcohol and "push it until the system is saturated, not desisting, until that point is reached." It is surprising what amount can be taken before its stupefying effect is felt.

The other two cases he quotes from Dr. Roberts, of Fort Madison, Iowa, who states (being himself the patient), that under the ordinary routine treatment, he gradually became so weak that he drank some whisky as a stimulant, which so strangled him and made him cough so violently, that "there was ejected a large quantity of membrane, in an almost cooked condition." Immediate relief followed, and in a short time it was again used as a gargle, affording much ease and comfort. Its frequent use in this way was continued, and in a few days he was

well. His second patient was a boy aged 14 years, very weak and "nearly black in the face from suffocation." Stimulants internally were freely administered, together with a gargle composed of potass. chlor., alcohol and aq. rosae, frequently employed. Immediate improvement followed. Since that time he has used alcohol very freely in diphtheritic cases, and always with the most favorable results.—*Med. and Surg. Reporter*, January, 1882.

TREATMENT OF DIPHTHERIA.—In a clinical lecture on diphtheria, at the Hospital College of Medicine, Louisville, Ky., Dr. John A. Larrebee lays down the following rules: Muriated tincture of iron, freely and persistently given, should form the basis of your treatment; its astringent property tends to prevent the organization of the membrane, while its effects upon the constitution tend to sustain the life of the patient and thus enable him to throw off the membrane. Another point I wish to speak of is this: the use of alcohol has been brought forward as something new by the profession. Any poison in the blood tending to destroy life by destruction of the blood corpuscles, as well as by its debilitating effects upon local tissue, indicates a stimulant and a preservative.

In alcohol we have the most powerful agent to prevent the destruction of animal tissues. Its stimulant property needs no comments. Give muriated tincture of iron then, and alcohol, with nourishment, but give the iron according to Col. Mulberry Sellers' directions for the use of his eye-water. Give along with this a whisky toddy, a milk punch, or, what is better, Christmas egg nogg, and don't withold it out of fear of intoxication. The amount of alcohol that can be taken under these circumstance with immunity is astonishing. I have myself given a child seven years old, a pint of whisky in twenty-four hours without producing any symptoms of intoxication.—*Quarterly Epitome, Braithwaite's Retrospect*, December, 1881.

[We wish also to testify briefly to the good effects of alcohol, employed as a remedy in this disease. Our familiarity with its use was obtained chiefly during an official connection with the New York Foundling Asylum, N. Y. City, where this remedy was quite thoroughly tested. Undoubted benefit resulted from its administration, and, for the age, surprisingly large quantities could be given with impunity and advantage. One little girl of three years is especially in mind at present, who received without noticeable alcoholic effects, one full teaspoon of brandy every twenty minutes, from Friday p. m., until the following Tuesday p. m., continuously and regularly. A fort-night later she was running about, quite well, and she was considered to be, in all probabilities, safe from any paralysis of the heart, soft palate or pharynx. M. A. W.]

LOCAL TREATMENT OF DIPHTHERIA.—1. Ice externally and internally is useful in the first stage. It is contra-indicated when it excites pain in young children, in advanced stages of the disease, and especially when gangrene exists.

2. Inhalations of vapors are very useful when the false membrane seems inclined to become detached, and when it occupies the larynx and trachea.

3. Dissolvents applied in the form of spray, or by brush are often of great service. Lime water and lactic acid are the best.

4. *Antiseptics.* Very important. Phenic acid, boracic acid, permanganate of potash, hydrate of chloral; the last is the most certain.

5. Varnish. *i. e.*, medicines that protect the false membranes from the air. Tolu dissolved in ether is the most useful. The use of this agent is not incompatible with the use of other local means, ice, etc.

6. Caustics are always injurious. Astringents are sometimes useful and sometimes injurious. Chloral may be employed as a solution in glycerine, fifteen to thirty per ceut., according to the age of the patient.

The glycerine covers the taste of the chloral, and makes a solution of proper consistency for painting upon the diseased surfaces with a camel's-hair pencil. It relieves the pain and difficulty in swallowing, retards the formation of new membrane, breaks up and loosens the membrane already existing, and, acting as a disinfectant and antiseptic, prevents septic infection of the system at large. The solution quoted above should be applied to the throat every second hour, the patient being roused in the night for its administration in bad cases. In the worst cases the membrane altogether disappears in three or four days, and healthy granulation rapidly progresses. The application is not painful; Rokitansky has employed a fifty per cent. solution, causing some pain in sensitive patients.—*Proceedings Int. Med. Cong.—Annales de l' Oreille, etc.—Quart. Epit., Braith. Retrospect.*

PILOCARPINE IN DIPHTHERIA.—From the study of a number of cases, Dr. Greza Faludi believes the following conclusions to be warrantable:

1. Pilocarpine, administered internally, is a remedy of incontestable value in diphtheria.

2. Pilocarpine will always be useful in inflammatory affections of the mouth or pharynx, on account of its property of producing excessive salivation. Nevertheless, it does not appear to be superior to chlorate of potash or chloride of iron, and can by no means be regarded as a specific.

3. It is especially of service in light cases of diphtheria, when the affection is limited to the buccal and pharyngeal cavities.

4. Unfortunately, it does not prevent the morbid process from invading the larynx and respiratory passages, and then a fatal termination is to be expected.

5. When this invasion of the air passages occurs, then pilocarpine is of no value.

6. When administered to young children, its consecutive depressive effects must not be lost sight of; under such circumstances stimulants should be associated with it.—*Bull. Gen. de Therapeutique*, Dec., 1881. —*Med. News*, Feb., 1882.

DIPHTHERITIC PARALYSIS WITHOUT AFFECTION OF THE THROAT — Boisserie describes in the *Gaz. Hebdom*, 1881, Nos. 20 and 21, an epidemic of diphtheria which showed cases: 1, of suddenly occurring paralysis without previous affection of the throat or deposit anywhere upon its furface—paralysis which proved fatal in some cases in a few hours or days. 2, of paralysis which was the first symptom, to be followed later by a diphtheric angina. 3, of throat affections in typical course without previous or subsequent paralysis. The author himself was a victim of the first category of cases, the occurrence of a number of which excited much dismay in the community, until their nature was definitely ascertained. Sample cases are described at length, and the paralytic sine angina cases are compared to the cases of scarlatina sine angina, or of scarlatina anginosa sine eruptione.—*Cin. Lancet and Clinic*, Jan., 1882.

CRITICAL EXAMINATION OF SOME WHOOPING-COUGH REMEDIES. — Professor Heubner of Leipsic, *Jour. f. Kinder Kr.*, has made an investigation of the most highly recommended remedies for pertussis, namely, bromide of potassium, quinine, hydrate of chloral, salicylic acid and belladonna, with the view of ascertaining their exact therapeutic value. * * * * The action of the remedies was studied in three directions, (a) in relation to the intensity of the individual attacks, (b) in relation to the frequency of the attacks within a given period of time, and (c) in relation to the entire duration of the disease. Six weeks was taken as the average duration of the disease; and if the medicine failed to shorten this the result was counted negative, while if the duration of the disease was shortened, it was counted positive. Forty-four uncomplicated cases of pertussis were studied. The drugs were given as follows: potass. brom. in doses of 0.5 to 3.0 grammes in watery solution per diem. Quinia was given in solution or in powder in the dose of 0.3 gramme per diem. Chloral hydrat. was given in two cases in broken doses, in the other cases an enema, in the dose of 0 3 to 1 gramme per diem. Salicylic acid was given in one case in the form of salicylate of sodium, inwardly. In the other cases it was inhaled as a spray, in a one-third to one-half per cent.

solution, 0.1 to 0.15 gramme of salicylic acid being inhaled at each sitting. Belladonna was usually given as the powdered extract in doses of 0.15 to 0.16 gramme per diem.

(The results are here given in a statistical table. M. A. W.) From the above table of cases, it appears that salicylic acid is about eight times as likely to be useful in diminishing the frequency and severity of the attacks as is bromide of potassium. Salicylic acid inhalations, as also the use of chloral hydrat., are therefore the best means of shortening and diminishing the attacks, while belladonna and quinine have the best effect in abbreviating the duration of the disease. It must be remembered, however, that the best of these remedies fail to diminish the number of attacks by one-half, and any new remedy which should be brought forward should be carefully put to the proof by these methods.—*London Medical Record.—Cincinnati Lancet and Clinic.*

TREATMENT OF PERTUSSIS.—Belladonna, to be beneficial in this disease, must be *pushed,* even to producing its toxic effects; say gr. ¼ of the extract, three or four times daily, or a *full* dose, according to the age, morning and evening, or the sulphate of atropia in solution, dose 1-240 to 1-120 gr. Nitric and hydrocyanic acids afford but temporary relief. The bromide of camphor, castanea, gelsemium, alum, benzoate of sodium and resorcin should not be forgotten. A spray of nitrate of silver, grs. x to water one ounce, the inhalation of carbolic acid, have often done good.

Owing to the many frequent failures, Dr. Binz's theory (which all are familiar with), and the administration of quinine in frequent large doses, has been pretty much laid aside. It is, nevertheless, a good tonic and appetizer and beyond question the proper remedy, should fever be present as a result of bronchitis, pneumonia or other causes.

First, for general use, I employ simply the syrup of wild-cherry; should the cough and spasm be severe, I think well of the following, this being one dose, to be given several times daily: chloral grs. ii, carbazotate of ammonia gr. ¼, in simple or other syrup. The child to be kept greatly *out of doors,* even at the risk of bronchitis, being careful to avoid the moist and wet easterly, but no danger in cold and dry north-west winds; the child to be well fed at *any* time, especially every time it vomits. To improve the blood, order syr. of the iodid. of iron, from gtt. v., to gtt. xxx, in some other pleasant syrup; keep down fever by sponging, aconite, quinine, salicylates, alcohol, etc. Emetics when much bronchitis and mucus.

Treat diarrhœa by astringents, change of air, careful diet, but be cautious of opium. The disease has its course, treatment but modifies

it; when beginning in November or December, it generally lasts somewhat until spring. The complications attendant upon pertussis may be of the most serious character. Hæmorrhage or extravasation of blood from the throat, mouth, eyes, etc., intense cerebral venous congestion, atelectasis, semi-collapse (lung), emphysema, capillary bronchitis, pneumonia, clonic convulsions, double inguinal hernia, etc.

The period of incubation, according to Dr. J. Lewis Smith, may be sometimes so short as four days. If a child seems comfortable and acts naturally between the the paroxysms of whooping-cough, it is doing well; but if, in the intervals, it becomes languid, listless, etc., repeated examinations and close watching are necessary.—[*Dr. J. B. Reynolds in a Clinical Lecture at the N. Y. Foundling Asylum.—From Notes by the Reporter*, 1879. M. A. W.]

CROUP.—CATHETER.—According to Dr. Foot of Dublin, there is nothing more than a little dexterity required to pass a catheter (say 10) into the larynx, a treatment which is now meeting with favor in œdema glottidis and croup.—*Maryland Med. Jour.*, Nov., 1881.

EXCISION OF THE KNEE IN EARLY LIFE.—From a paper on this subject, Dr. William Stokes draws the following conclusions:

1. Excision of the knee should not be looked upon as a last resource, but should be undertaken, if possible, before any profound organic changes take place.

2. Expectant treatment, to be efficient, must be undertaken at an early stage of the disease, and extend over a period of at least two years.

3. No better result than ankylosis can be looked for by this method.

4. In a patient with a predisposition to secondary tuberculous developments, the possibility of the recurrence of the disease after expectant treatment must be borne in mind.

5. In cases attended with prolonged suppuration, the chances of the recurrence of visceral, especially renal disease, must not be lost sight of.

6. Where the skin is unbroken, the disease limited, an efficient method of fixation applied, and a rigid system of antiseptic dressing of the wound adopted, primary union may, in the majority of cases, be anticipated.

7. When these latter conditions are fulfilled, excision of the knee-joint cannot be longer regarded as the formidable procedure it was formerly held to be.

8. The alleged unfavorable results of excision of the knee-joint in early life are opposed to more extended clinical experience.—*Brit. Med. Jour.*, Dec. 10, 1881.—*Medical News*, Jan., 1882.

OPERATIVE ASSISTANCE IN INFANTILE PARALYSIS.—Some cases recently operated on by Prof. Albert have excited a good deal of interest. Struck by the fact that many subjects of infantile paralysis are condemned to the life long use of more or less complicated apparatus to compensate for the loss of rigidity in the lower limbs, and that the poor cannot get such instruments, he has attempted to increase the use of the legs by operation. He excises the knee and ankle joints, and thus obtains bony ankylosis between the femur and tibia, fibula and astragalus. The rigid lower limbs in walking are swung forward by the adductor and great flexor muscles of the hip joint, which generally retain or recover their power. This treatment has already been carried out in four cases, and a fifth is now preparing for operation.—*Lancet*, Nov. 19, 1881.—*Ibid.*

RAPID LITHOTRITY IN CHILDREN.—In the *Allg. Wien. Med. Zeitung* for November 29, 1881, there are reports of two cases in which litholapaxy was attempted in children and terminated unsuccessfully. In the case of a boy, aged six years, operated on by Prof. Billroth, several large fragments were left in the bladder, and false passages were made with urinary infiltration and death as a result. The other case was operated on by Prof. Dittel, in which litholapaxy was unsuccessful, and had to be followed by lithotomy. Prof. Bigelow has never recommended his operation as applicable to children.—*Louisville Med. News.*

TREATMENT OF SUBCUTANEOUS NAEVI.—Carey Combs has reported in the *London Lancet* (Med. Neuigkeiten) a new method of treating subcutaneous naevi. A child nine months old was submitted to him for operation upon a naevus three-fourths of an inch in diameter upon the left ala nasi. The use of gold needles with the galvanic current not being practicable, two very fine silver wires were passed through so as to run parallel about a fourth of an inch apart and the ends were connected to a Bunsen's battery. As soon as the wires become hot, the current was broken, the ends of the wires were united to each other and allowed to remain in the skin with a covering of lint and plaster. One week later the galvanic current was again applied, and three times after that; then the wires were withdrawn and the naevus was found to have entirely disappeared.

This operation commends itself above others on account of the trifling pain it causes, its harmlessness and the ease with which it is performed, in so much as the insertion of the needles has not to be repeated. Besides this, the fine silver wire that is used requires only a single element of the Grove or Bunsens battery.—*Cincinnati Lancet and Clinic, December, 1881.*

HYSTERIA IN CHILDHOOD.—Schmitt (Ann. Unio di Med. et Chir.) confirms the existence of hysteria in children, as is admitted by numerous authors, and reports several cases seen in the clinic at Strasbourg:

1. A case of hysterical aphonia in a little girl aged seven years, and cured by the simple introduction of the laryngoscope.

2. A case of a little girl thirteen years of age, who had not yet menstruated, and who had for nine months been unable to swallow; she was cured by a single catheterization.

3. A case of an anæmic and badly-nourished little girl aged nine years, with convulsive and maniacal hysteria, which resisted all treatment.

4. A case of a little girl nine years old, who had a hysterical contracture and was cured by moral treatment.

As causes of this rare disease, the author indicates anaemia, chlorosis, and inherited nervous temperment. The general condition of the patient must be improved before any treatment is attempted.—*L'Union Med., Nov. 1881.*

GANGRENOUS VARICELLA AND VACCINIA.—Mr. Jonathan Hutchinson, has described recently a form of chicken-pox that takes on gangrene, is accompanied by suppurative iritis, and in some cases has proved fatal. He regards the disease called "burnt holes" in Ireland, also the "eating hive," as this gangrenous type of varicella. It usually occurs in healthy children. Mr. H., argues that vaccinia has also its gangrenous type, even in healthy infants, and he gives the history of a case—it died on the twenty-first day—which he believes belonged to that type. Mr. W. Stokes, of Dublin, has also described a similar case, in which for a time the danger was great, but eventually it recovered.—*Proceedings of the Medical Society of the County of Kings.*

RŒTHELN.—Dr. C. M. Jones, *Boston Med. and Surg. Journal*, describes a number of cases of this disease, and gives an excellent table in which the clinical history and symptoms of rœtheln and measles, are contrasted. He believes that it should be regarded as a specific exanthem:

1. Because of its contagious reproduction of itself.

2. Because it does not afford immunity from any other disease, nor does any other disease afford immunity from it.

3. Because of the peculiarities of the eruption.

4. Because of the peculiarites of the temperature.

5. Because of the absence of desquamation.

6. Because of the absence of sequelae.—*Med. News*, Jan. 28, 1882.

RŒTHELN.—"Rubeola or Rœtheln resembles in its exanthem that of measles more than that of any of this class of diseases. But the size, form and color of the spots will clear up this part of the diagnosis.

In rubeola, the spots are less, their form more round, they are not so angular and indented, nor so often provided with processes; owing to the very slight swelling, they seem paler and more as if they had been sprinkled over the surface. The rash is lighter in color than either measles or scarlet fever, and the desquamation is entirely absent in most cases. The most important symptoms after those of the skin are afforded by the mucus membranes of the air-passages and of the buccal and pharyngeal cavities. (Thomas Art. Rubeola, Ziemssen Cycloped, Vol. 2). Then in rœtheln we have little or no initiatory fever, but sneezing, suffusion of the eyes, etc., are true symptoms. As to whether rœtheln will protect against measles or scarlet fever, we are not prepared to declare."—Dr. D. S. Booth, *St. Louis Clinic*, *Rec.* Nov. 1881.

CHRONIC TONSILLITIS.—Dr. Hogue, *Med. Brief*, Oct., writes: I have successfully treated several children where excision was impossible, by the use of a prescription from the clinic of the late lamented Professor James Aitken Meigs, viz.:

R. Chromic Acid, - - - - xx grains.
Aquae, - - - - 1 ounce.

M. Sig. Apply to the tonsils by means of a camel's hair brash.

I have found it to succeed even when the thickening was very great. —*Quart. Epit*, *Braithwaite's Retrospect*, Dec., 1881.

[It is not considered the best, or even a necessary plan, at present, to excise hypertrophied tonsils in children, as time and treatment will remove the affection. Many good remedies for internal, local and external employment have been made known and can readily be "hunted up" by the industrious student. M. A. W.]

THE BATH TREAMENT IN SCARLATINA.—Dr. D. M. Frazer (*Practitioner*, July, 1881), in order to test the effects of baths in scarlet fever, subjected twenty-one patients to this treatment in the Metropolitan Fever Hospital, Homerton. He began in November, 1880, and continued it until the end of the year, the epidemic being on the decline. The baths used he roughly divides into three classes: (1) warm baths, temperature between 90° and 80° F.; (2) Ziemssen baths, those gradually cooled during immersion of the patient; and (3) cold baths, of a temperature from 70° to 60° F. The duration in all cases was five or ten minutes. Stimulants were occasionally administered to prevent collapse. As to the indications, while not depending altogether on the degree of fever,

Dr. Fraser always employed the bath if this was excessive, 103°–104° in rectum, or if there was a persistent temperature of 102°–103°, with consequent nervous disturbance. The author thinks we can prevent the nervous prostration which is sure to follow protracted fever, by the timely administration of baths. He also recognizes the fact that we may have the nervous excitement without the antecedent or concomitant high fever or vice versa, and considers baths adapted to such a condition. Where members of the same family have suffered severely, it is a good plan to begin early with the baths, before grave symptoms develop. The contra-indications are feeble circulation, and where great fear and excitement attend the immersion.

The effects of the bath are classified under the heads of (1) effects on temperature, (2) effects on the nervous system, (3) effects on the circulation, (4) on respiration, (5) on skin, etc., (6) effects on sequelæ.

The *temperature* invariably fell after the bath. After a warm bath the fall equalled 3° or 4° F., but it regained its former height in an hour. After a cold bath the thermometer often showed a decline of 7°, and the previous temperature did not return until from three to six hours.

After baths, which were cooled during the immersion of the patient, the fall was 4° or more, and if the duration was short, the former temperature rapidly re-established itself. But if the immersion was prolonged after cooling, making virtually a cold bath, the effect was more pronounced and lasting. Yet, here the fall was not equal to that in the bath which was cold at the beginning, showing, apparently that in the latter case the nervous shock plays a part.

The *nervous system* was always calmed. In all but one case, delirium, restlessness and insomnia ceased. The *circulation* appeared to be depressed during immersion, but afterwards resumed its former character. As regards respiration, there was no marked effect upon its frequency. The treatment did, however, in many cases, allay cough. In no instance did it originate pulmonary mischief.

The effects on the *skin, etc.*, were variable. In some cases the eruption was increased, as Trousseau has said. Desquamation was not modified. Thirst, as noted by Currie, was diminished, but diarrhœa was not apparently influenced. The *sequelæ* and *mortality* are shown in the following table.

The most common sequelæ of scarlet fever are adenitis of the neck, otorrhœa and albuminuria. This table shows three cases of adenitis; one only was severe, and none suppurated. Otorrhœa, one very mild case.

Four patients had albuminuria (about one-fifth); Trousseau says one-third have this sequela. Ten, or about fifty per cent. of all the cases suffered from a sequela, which fact Dr. Fraser regards as favorable,

considering the severity of the attacks, and says that the per centage is not larger than occurs after other methods of treatment. The mortality was two per cent. For the whole year, 1880, the mortality in scarlet fever at Homerton was eleven per cent.

The baths were all given during the acute stages of the fever, and varied in frequency from one to six in twenty-four hours.—Dr. J. Fewsmith, Newark, N. J., *Amer. Jour. of Obstet.*, Jan., 1882.

[BATHS AS A REMEDY IN PYREXIA.—It has frequently been a matter of surprise and almost inexplicable to us, *why* the medical profession of this country (excepting perhaps the largest cities and hospitals) exhibit such a want of appreciation, such an indifference to this exceedingly useful mode of treatment. Very nearly *all* diseases characterized by high fever as a prominent feature, those of the brain, the chest, the abdomen, joints, skin, etc., are either favorably modified or palliated—much improved or *cured*—by the proper employment of water for reducing hyperpyrexia, relieving insomnia, quieting delirium, as also with benefit to many other symptoms, more or less present. The use of water either as baths hot or cold, in the way of cold packs, affusions, douches, sponging, etc., is *not*, in our experience, dangerous, subsequent ill-effects are but seldom observed, it is prompt, quite reliable and certain.

No internal remedies as yet employed can accomplish the same object with anything like as little danger, with such quickness and certainty. When drugs reduce pyrexia, it is only through such large doses and frequent administrations as to render the treatment very disagreeable, if not actually unsafe.

Should physicians themselves more often and generally, endorse and employ baths, packs, etc., the laity (parents) would soon withnld all their present opposition to, and fear of, them. M. A. W.]

NOCTURNAL INCONTINENCE OF URINE IN CHILDREN.—Few practitioners escape the care of frequent cases of children's nocturnal incontinence. It is one of the least dangerous, but at the same time one of the most annoying and persistent disorders of childhood, and any help we may get of a practical sort, especially in the way of prevention, will be welcome to our readers. A recent paper read before the Harveian Society, by Dr. T. Robinson, has two homely hints that are of value, and to which we desire to call attention.

"There is no doubt," he says, "that nurses and mothers are frequently to blame for this troublesome vice. Young people ought to be taken out of bed during the night and placed on a chamber, so as to excite their bladders to act." And again: "Fear will frequently prevent young people from rising in the dark to relieve themselves."

If we instruct our patients to take up their children when they go to bed themselves, we shall do much, even in quite young children, to arrest the natural incontinence of infancy. And no parent should allow children to sleep without a dim but sufficient light, not only that they may readily find the chamber or the water-closet, but that in case of fire or sudden illness darkness may not add its unknown terrors as a hindrance to their seeking aid, or the means of escape. If they sleep at a distance, or in different stories, the halls also should be lighted.—*Medical News*, Jan. 28, 1882.

NOCTURNAL INCONTINENCE OF CHILDREN.—Prof. S. D. Gross, of Philadelphia, advises the following formula:

R.	Strychniae, - - - - -	1 grain.
	Pulv. Cantharid, - - - - -	11 grains.
	Morph. Sulph., - - - -	1½ grains.
	Ferri. Pulv., - - .- -	1 scruple.

M. Make 40 to 50 pills or powders, *pro re nata*.

Sig.—One three times a day to a child ten years old.

This prescription will speedily relieve the irritability of the bladder, especially if conjoined with such means as a cold shower bath daily, the avoidance of irritant food and late suppers, the patient lying on the side or belly, and taking care to drink nothing for the few hours preceding sleep, and to empty the bladder on going to bed.—*Mich. Med. News.*

Dr. Lamson has been found guilty.

Dr. Pirrogoff left at his death $35,000.00.

Dr. Pancoast, the celebrated surgeon and author is dead.

The Michigan Medical College held commencement excercises March 1st.

Dr. J. Marion Sims is now at Nice, France, having entirely regained his health.

The Detroit Medical College held its Fourteenth Annual Commencement March 2nd.

Every Physician wishing the ROCKY MOUNTAIN MEDICAL TIMES success, should subscribe at once.

Central College of Physicians and Surgeons of Indianapolis, held their Third Annual Commencement February 28th.

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MEDICAL, SURGICAL AND OBSTETRICAL SCIENCE.

MAY, 1882.

ORIGINAL LECTURES.

PHLYCTENULAR KERATITIS.

A LECTURE BY OREN D. POMEROY, M. D.,

SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL, NEW YORK.

GENTLEMEN:

The subject under consideration to-day may be variously denominated, strumous ophthalmia, keratitis vesiculosa, herpetic keratitis, ulcerative corneitis, etc. It is a disease peculiar to youth and childhood, and in general terms may be said to be accompanied by symptoms of depression of the vital energies, from a variety of causes. Hence the name strumous has long been applied to it. As there is a very little difference in the therapeutic indications for the management of struma and general depression of the system it is not really necessary to make any sharp differentations in our diagnosis of the particular causation of this affection.

The symptoms of the disease are as follows: First and most important is photophobia or intolerance of light. This may be so great that the child buries the face in the nurse's lap, utterly refusing to be removed, and when the slightest light is allowed to enter the child's eyes even through the closed lids, the most frantic cries of distress are heard. Again the patient may turn the eyes to the light with comparative comfort, there being only a slight corrugation of the eyebrows or a moderate increase in the vertical folds of skin between the eyes. On opening the eyes, which may be attended with great difficulty, a profuse flow of

transparent tears will suddenly gush forth accompanied by violent screams. It is often so painful a proceedure as to necessitate the use of ether. In a small child etherization may be sufficiently done in from one to three minutes; so it is comparatively a small matter. If not done under ether, the eyelids may need an elevator to sufficiently expose the globe, or by keeping a finger firmly pressed on the tarsal border of the lid to prevent eversion, the eye is sufficiently exposed.

If a perforating ulcer is found, very moderate pressure should be made on the eyeball for fear of rupturing the ulcer and causing escape of the humors of the eye. It is a good rule when the lids are widely separated to rest the finger on the upper rim of the orbit, so that in the struggling of the child, the eyeball may not be excessively pressed upon. On exposure of the eyeball, you may be surprised to see *no signs of inflammation*, the eye looking apparently natural. Generally, however, you will see either a slight abrasion of the epithelium of the cornea with some circum-corneal redness, or you may find one or more ulcers, generally of a small size, situated rather towards the periphery of the cornea, although central ulcers are occasionally found. Sometimes a large number of ulcers are seen at the margin of the opaque cornea, which may lie somewhat elevated, giving it the appearance of what has been described as the "scrofulous ring." Most of the ulcers commence as a vesicle or papule, which after a little, rupture and form the true corneal ulcer.

It is not often that the patient is seen early enough to recognize the vesicular or papular stage of the process. At the first, the ulcer may be perfectly transparent, so that only a loss of corneal substance is observed. If you take the patient to a window and get the reflex of it on the cornea, this condition may be easily recognized. After a very little time, when the reparative process has commenced, opaque material will be thrown into the ulcer depression and much change its appearance. Sometimes, if the ulcer has remained for a long time, minute blood-vessels may be seen shooting across the cornea and terminating at the ulcerated point. This latter might be denominated *vascular keratitis*. This only follows the law of corneal changes, whenever there is corneal irritation, there will be a tendency to vascularity.

After a few days we are likely to have conjunctivitis both of the lids and of the globe, which will require attention. In fact there is a catarrhal element to the disease, which may be seen by the frequent accompaniment of nasal catarrh. The upper lip may be swollen and excoriated by the irritating discharge. The same is often true of the lower eyelid and upper part of the face. These appearances give the patient a very "strumous" look indeed. Sneezing is a very frequent symptom and naturally is reflex dependent on irritation of the lining of the nostrils,

tear duct and eyelids. Sometimes epiphora is seen in consequence of the narrowing of the tear ducts from inflammatory swelling of its wall lining.

The diagnosis is comparatively easy. Photophobia is rarely seen except in corneal or irideal affections, and as small children rarely suffer from iritis, the symptom readily points to keratitis; and further, as children rarely have other varieties of keratitis than the one under consideration, the diagnosis is easy. It is true that children frequently enough are troubled with granular lids and trachoma with the accompanying corneal complications, but the latter diseases are of long continuance, the lids are frequently enormously swollen, and the corneal troubles will present a totally different appearance—true vascular keratitis, pannus, nebulous cornea, etc. In catarrhal conjunctivitis the disease often extends to the cornea it is true, but evidences of this will appear. The limbus will be greatly injected, and blood vessels may be seen extending upon the cornea. Moreover, in the earlier stages of the disease, no photophobia is present, or any spasm of the eyelids. There is a variety of diffuse keratitis in children which depends on struma or inherited syphilis, but a generally diffuse haziness of the cornea with moderate or no photophobia easily reveals a different affection.

The cause of this affection is somewhat obscure. There is no question but there is a higher sensitiveness of the branches of the fifth nerve. This state is certainly more liable to result in those of sensitive nervous organization; all weakly children are naturally placed in that category, including the strumous and those inheriting syphilis. Anything whatever that induces this state is a predisposing cause.

Taking cold and the accompanying catarrh of the nasal passages, would by extension, reach the eyes through the tear ducts. I already have mentioned the fact of catarrhal conjunctivitis invading the cornea, and a true phlyctenular keratitis may be produced in this manner. Crowded tenements with the accompanying filth may produce this disease, and naturally *anything* that lowers the tone of the system and causes the condition to approach at all to the state of lowered vitality which characterizes the strumous diathesis; occasionally, dentition seems to disturb the system sufficiently to excite this disease. Sometimes disorders of the intestinal canal may develop the disease.

In *the prognosis* we look for opacities of the cornea; naturally no loss of corneal tissue can be made up *at first* by transparent tissue. Fortunately, there is ever a tendency in subsequent metamorphoses of tissue to produce normal transparent cornea. This, however, has its limitations. In the loss of epithelium and Bowman's layer, we are quite sure that transparent cornea will result; but, if the proper substance of the cornea or the membrana Descemeti is attacked, an opacity is quite

likely to be permanent. A familliar illustration of this is found in the operation of paracentesis cornea, when an opacity is quite likely to result. More than this, however, we may find even when the opacity is gone, the curvature of the cornea has been changed so as to cause some irregular astigmatism, or at least some inexplicable distortion of objects so as to interfere with vision. I have often noticed this in patients with defective vision. The cornea would give an unsymmetrical reflex, the vision would be below the normal, with no benefit from correction by glasses. On inquiry, I have found that the patient has had inflamed eyes in childhood, which would naturally explain the phenomenon.

I fear that few who have had considerable ulcers of the cornea recover with perfect vision unless the ulcer is beyond the margin of the pupil. If the cornea perforates near the centre, no anterior synechia ordinarily results; but if beyond this point, quite likely an anterior synechia results, which drags the pupil to one side, much disturbing it; somewhat rarely is it obliterated. As there are no iritic processes here as a rule, any small remaining portion of the pupil becomes available for purposes of vision, opacity of any considerable portion of the cornea is rare. As far as I have observed, the synechia of this affection do not provoke sympathetic trouble in the fellow eye; so an iridectomy here would be done probably for visucal purposes only. If the vision of one eye is so far destroyed as to interrupt the stereoscopic effect of binocular single vision, and the affected eye has a dominating internal rectus, then a convergent squint is likely to result, which probably would not be cured by subsequent restoration of sight in the blind eye. Although one attack may be recovered from, there is a strong tendency of the disease to relapse on trivial exciting causes, and if we are not extremely careful, considerable damage to vision will ultimately result.

In *the treatment*, the first indication is to relieve the irritation of the fifth nerve on which the disease depends. For this purpose, atropiae sulph., is, of all the remedies, the most valuable. It would at first seem contra-indicated on account of the wide dilatation of the pupil resulting from its use, as many times more light is allowed to enter the eye; and this indeed is the argument of those who advocate the use of pilocarpine and other myotics. Experience, however, of most of the best ophthalmic surgeons decides otherwise, for if there is a remedy that acts like magic, it is atropine for the relief of photophobia and ciliary neuralgia in phlyctenular keratitis. A solution two grs. to the ounce of water may be instilled from three to many times a day. At first, if the symptoms are urgent, it may be used every 15 or 20 minutes until relief is experienced. In children one or two years of age, I would use a one grain solution.

You may remember that in adults we use sometimes a four gr. sol. 20 or 30 times a day. Here, however, we have the symptom of dryness of the throat to caution us that we are going far enough. In children, sometimes a single instillation will produce an intensely red eruption on the face which might frighten the inexperienced. Occasionally, atropine will produce intense conjunctival irritation, even to the production of an acute granular conjunctivitis; then it may be changed to the watery extract of belladonna rubbed on the brow and temples. Now would be a good opportunity for trying muriate of pilocarpine, two grains to the ounce, used somewhat less frequently than the atropine. Stimulants and irritants may be used in conjunction with the atropine, such as the red oxide of mercury in *very* fine powder with vaseline, one or two grains to the drachm, applied between the eyelids once or twice a day. After this, the lids may be moved upon the globe so as to thoroughly rub the ointment over the whole surface of the eyeball. The yellow sulphuret of mercury may be used in the same manner. Calomel in fine powder may be dusted into the eye every day or two. In this instance it is well, after a few minutes, to evert the lids and remove any considerable masses which may remain and unduly irritate the eye. The ointments just referred to should not excite too much irritation, as an unpleasant conjunctivitis might result.

It is my practice to always evert the upper eyelid to see if there be any considerable conjunctival irritation, and if there is, to give it appropriate treatment; indeed, in the latter stages of the disease, after the light intolerance has gone, we only have a conjunctivitis of the eyelids remaining. The treatment recommended here may well surprise many of the older men in the profession who are in the habit of treating these cases for the most part, constitutionally. I well remember when a recipe as follows was frequently prescribed: to wit, a small alterative dose of hyd. c. creta combined with dovers powder and quinine; a dose administered three times daily. Cod liver oil and syr. ferri. iod. was frequently prescribed. Rhubarb and soda also as antacids and correctants. All of these naturally are good, but it goes without saying that whatever improves the general condition and elevates the tone of the patient, is strongly indicated. Indeed, this is one of the best means of preventing relapse.

Among surgical measures for the relief of this disease, we may mention first, paracentesis of the cornea. This may be done for the relief of pain, whether the intra-ocular pressure is above or below the normal, and may be repeated every day or two. Be careful, however, not to overdo the matter, for even if you do not wound the lens capsule and produce cataract, a too great repetition of the operation may produce cataract by

some not easily explained interference with the nutrition of the lens. Ordinarily, the puncture may be in the periphery of the cornea to avoid a cicatrix; but if there is an obstinate ulcer, the puncture may be made at the ulcerated place. The reparative effort to close the puncture may set up a new, and better action in the ulcer itself.

If pus is found in the anterior chamber it is not usually necessary to let it out; its absorption resulting ordinarily with rapidity. If the spasm of the orbicularis continues in spite of other treatments, I would advise canthotomy—a division of the external canthal ligament without the use of sutures. It is done as follows: a stout pair of scissors is dipped into the ext. canthus about half way to the rim of the orbit, and the whole of the lid for the space of a line and a half is divided with a strong firm stroke; then by another incision divide the lid, with the exception of conjunctiva for another two lines. At this juncture, catch the upper lid in the fingers and still further divide the canthal ligament by passing the blades somewhat upwards, but now avoiding both skin and conjunctiva. Very soon the lid will be felt to yield in the fingers, and it will seem to be pretty well cut off. In other words, the power of the orbicularis is for the time almost nullified. This operation is of the greatest assistance in obstinate cases.

By the next day the spasm and photophobia may have entirely disappeared. In the older books much is said about counter-irritation. Blisters behind the ears, setons in the nape of the neck were used. At the present very little of this sort of treatment is practiced. If there is pain in the supra-orbital regions and temple, there is no question of the propriety of painting on tincture of iodine or even applying a blister of cantharidal collodion. Ointment of veratrine, or a chloroform liniment containing tinct. aconit. rad., may be used, or even any stimulating liniment. A few years since, a coarse thread seton was used, placed on the temple just within the border of the hairy scalp, and pulled daily. Besides the most careful means to overcome all constitutionally lowering of tone, baths are found to be effective. They combat catarrhal tendencies, they act as extensive and powerful revulcants, and by a judicious use of friction the skin is rendered hardier, and the patient suffers less from atmospheric vicissitudes, which contribute so largely to bring about relapses. I do not advocate shutting the patient up in a darkened room, even when the light produces great suffering. The darkened room depresses the energies of the patient and is likely to produce demoralization, which is a powerful factor in perpetuating the disease.

A black patch may very properly be worn, and if more is needed, the eyes may be covered for a part of the time with cotton wool, covered in by a black patch fastened to the part by a tape passing around the

head. This, however, is heating and often works badly. There is one argument, however, in its favor: it keeps the eye from moving about freely and the ulcer heals more kindly. Bathing the eyes in water as hot as can be borne for five to fifteen minutes at a time, often relieves pain and facilitates the healing of ulcers. If the application is indicated it will be agreeable, if there has been a sufficient application made, any more will become unpleasant or even painful. Cold applications are often serviceable.

Von Graefe was in the habit of ducking the faces of his little patients in cold water, which would frighten them and often break up the photophobic condition. More recently, Dr. Openheimer of New York has reported good results from instilling a few drops of ice water while the lids are held widely apart, this position to be maintained for several minutes, while repeated applications are made. This may be done several times daily. I cannot say, however, that my success has been great with the remedy. All approach to a macerated or poulticed condition should be avoided, and some go so far as to introduce a spring speculum into the eye and keep it open long enough for any excess of moisture to evaporate (Dr. Agnew). Other means besides the atropine may be used to cause nervous irritation to subside.

Etherization or chloroforming the patient until the eye can bear the light (partial anæsthesia), will sometimes break up the photophobic habit. Duboisine or hyosciamine or even homatropia may be used; the latter somewhat stronger in solution than atropine. In some cases our resources will be taxed to the utmost to relieve the symptoms. A Turkish or Roman bath occasionally does wonders.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

By W. R. Whitehead, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER, AND VISITING SURGEON TO VENEREAL DEPART., ARAPAHOE COUNTY HOSPITAL, IN CHARGE OF MEDICAL DEPARTMENT OF THE UNIVERSITY.

LECTURE VIII. HYDROCELE AND VARICOCELE.

Gentlemen:

The accumulation of an albumino-fibrinous liquid in the cavity of the tunica vaginalis produces the disease called vaginal hydrocele. The loose tissues surrounding the spermatic cord may be the seat of one or more encysted tumors of the same nature; and this affection is known as encysted hydrocele. The tunica vaginalis communis may be the seat of hydrocele and in free communication with the peritoneal cavity, and in such case, the disease is designated as congenital hydrocele.

This accumulation of albuminous or fibrinous liquid usually occurs slowly and is the result of an irritative action of the tunica vaginalis, which, as you know, is a serous cavity very much like the pericardium or pleura. Effusion into the tunica vaginalis nearly always takes place in gonorrhœal orchitis as the result of inflammation. In such cases, however, the liquid is quickly absorbed on the subsidence of the orchitis. During warm weather, and in warm climates, there is constantly a relaxation of the scrotum, and the fredom of movement of the testicles is such as to expose them frequently to contusions or other injuries, and the consequence is, that hydrocele is a very frequent disease in such countries as Brazil, where every man in ten is reported to be troubled with this disease. In India the disease is said to be very frequently observed, and the scrotal enlargement occasioned by it, is such as often to produce a most troublesome infirmity; the hydrocele containing sometimes considerably over a hundred ounces of liquid, and producing a distressing traction on the genital organs.

The tumor may attain to an enormous size. In the hot oriental countries, elephantiasis often co-exists with this disease. The quantity of fluid may not exceed half a drachm, and usually does not exceed a pint. Although a more frequent disease of warm countries, yet hydro-

cele is a very common malady in the temperate zone, and not infrequent in this country; indeed, this disease is extremely frequent. In England, as much as 48 ounces of liquid were contained in one hydrocele observed by Curling; and six quarts are said to have been removed from the historian Gibbon. The liquid is usually of a light straw color, but may vary to a dark brown, and may contain blood and fibrinous clots, or the liquid may be purulent, as the consequence of severe injury causing inflammation that is followed by suppuration.

The walls of the sac are usually, in hydroceles of recent formation, thin, translucent, tense and shining, so that by transmitted light from the flame of a candle in a dark room, or even by a slightly shaded sun light, by means of the hand, the transpariency of the tumor is observed, and its nature quickly recognized. The gentlemen who has kindly permitted me this morning to show you a large hydrocele with which he as affected, was tapped some years ago, and he enjoyed immunity from the disease for a while; but it returned, and as I will proceed to point out to you, this case offers many of the typical features of hydrocele. Notice the partial effacement of the penis by the encroachment of the scrotal mass. Hydrocele which is usually pear-shaped with its base directed downward, is in this case globular, exceedingly tense, and not very movable, though it can be lifted slightly, and it will be noticed, that for so large a tumor, that it is comparatively light. Fluctuation may be perceived, yet the great tension to which the skin of the scrotum is subjected, makes this symptom rather uncertain.

The testicle is usually situated behind and about midway the extremities of the tumor, but you will find in this case that the globular mass precludes an accurate location of the testicle at first, and that it is necessary for me to press rather firmly with the thumb, and index of my left hand, as I now do, and you observe that the gentleman instantly discovers to us, the presence of his testicle by a slight manifestation of the characteristic sensations, that are experienced when this sensitive organ is compressed. You observe that in percussion of the tumor the sound is dull and flat. It is impossible by transmitted light to perceive the nature of the liquid, simply because the tumor is opaque. An exploratory puncture would determine the nature of the liquid, but it is quite needless to subject the patient to pain, and on Saturday we shall etherize him and withdraw the liquid, when you will see its color, and also the mode of treatment that I propose to adopt in this case:

After the withdrawal of the liquid and an injection of about ½ drachm of a saturated solution of carbolic acid, I shall re-introduce the pointed steel of the trocar into its canular, and turning the point slightly downward, I shall perforate the skin of the scrotum. Leaving the

tunica vaginalis and scrotal integument thus doubly transfixed; by the canula, after the withdrawal of the steel; I shall then pass through the canula half a dozen pieces of fine silver wire, withdraw the canular over them, leaving them in place, and knot the bundle of wires at each end, and leave it in the tunica vaginalis about 36 hours to act both as a seaton, and drainage tube.

The opacity of this hydrocele is probably due to the thickness of the walls of the sac; it is indeed extremely probable that there have been fibrinous deposits on the surface of the tunica vaginalis, and that in the course of time, if this hydrocele is not cured, the walls of the cavity will become stratified and be of variable thickness; and even calcareous deposits may incrust the inner surface of the sac. From blows or violence of any kind, an old and bulky hydrocele, which is constantly exposed to injury, may be complicated with hæmatocele, and suppurate or go on enlarging so as to present finally, the appearance of a solid and weighty mass, which may require incisions, and even excision. Such I have seen of the size of the head of a child a year old, and which required to be freely incised and dressed with lint, and frequently poulticed. Oakum may be advantageously substituted for lint. By this treatment, together with general supporting measures, the mass would be gradually reduced, and a final cure affected after some weeks or months of assiduous care. Fortunately, such cases are of rare occurrence.

Nothing usually is more simple than to recognize a hydrocele: the dioptric test applied in a dark room, the pyriform shape of the tumor, its lightness, its gradual and almost imperceptible appearance, dulness on percussion, fluctuation, and the irreducible character of the tumor, are usually sufficient to distinguish a hydrocele. But there are cases which are difficult to distinguish from hernia, and other forms of scrotal tumors; in fact, varicocele, hernia and some other diseases sometimes co-exist with hydrocele.

Incarcerated hernia may offer considerable perplexity to the surgeon, and embarrass his diagnosis. In hernia it will be difficult to feel the cord. The presence of the omentum may make the percussion sound dull; but the history of the case, the shape and weight of the tumor, will aid in making the diagnosis. There are some old incarcerated hernias which I have occasionally seen, such as Broëa has so well described, that may be a source of considerable perplexity, and this perplexity not at all lessened by the hernia becoming inflamed. In such cases, hydrocele may as a complication, occur and it is only after several days of rest in bed, and the free use of poultices, that the inflammation, which threatens strangulation as a consecutive result, is so far reduced as to permit of an instructive manual exploration of the parts. There may be hydrocele of

the hernial sac of an incarcerated hernia: inability to feel the spermatic cord, the ildefined neck of the tumor, absence of impluse on coughing, and the previous history of hernia will aid you in forming a correct opinion about the nature of the disease.

Cancer has a mammillated appearance; sharp pains occur, and other characteristic symptoms distinguish it. Tuberculous testicle or syphilitic disease of this gland should not to be mistaken for hydrocele; and besides the local distinctive features of hydrocele, the general constitutional symptoms of syphilis or of tuberculosis should put you on your guard against error. In case of hernia complicating hydrocele, and the symptoms are much obscured, it would be best to make an exploratory incision before puncturing, dividing the tissues carefully on a director as you would if operating for strangulated hernia. It would be an awkward thing for you, through mistake, to puncture a hernia for a hydrocele. Bear in mind, also, that hæmatocele of the tunica vaginalis may occur as the result of the puncture you make for emptying a hydrocele, especially in case of inverted testicle. But you should not fail to readily recognize an ordinary hæmatocele or effusion of blood into the loose cellular tissue of the scrotum, known by its purplish or echymotic appearance, and which is the result of blows or an altered state of the blood as in purpura or scury.

I mentioned a few minutes ago, a condition of the testicle known as inversion. Let me explain to you that this is a malposition of the testicle, that is said by Curling and Ricord to be quite common, and is of importance in the operation for puncture of hydrocele. Usually, as you know, the testicle is situated on the posterior part, and somewhat below the middle of the sac of the tunica vaginalis, so that in case of hydrocele, the distended sac is situated in front, and the testicle is obliquely suspended posterior to the sac. A puncture which is directed upwards and outward, as it should be usually, would, in case of inversion of the testicle, seriously wound this gland, which, in this form of malposition, is located anterior to the sac. Godard, Royet, Maisonneuve and others, have pointed out other forms of malposition of the testicle, but the allusion which I make to this subject will be sufficient, I hope, to warn you to make a careful examination of a hydrocele before proceeding to puncture it.

In case of hydrocele of recent occurrence, especially in young children, simply puncture and evacuation of the liquid may suffice to effect a cure; and this is more apt to happen, if the interior of the sac be slightly scratched with the end of the canular of the trocar, thus inducing an inflammatory adhesion of the walls of the sac. In the adult, usually, such mild treatment is only paliative and not curative; neither are stimulation lotions or applications, as iodine, of the slightest avail in producing a cure of

hydrocele in the adult. Injection of the vaginal sac with stimulating liquids is generally the method most adopted for the cure of this disease. Tincture of iodine diluted, alcohol, lime water and other substances are each available and useful; but the tincture of iodine injected in sufficient quantity to reach every part of the surface of the cavity, and of sufficient strength to produce adhesive inflammation, is the favorite liquid employed. There is no special objection to the tincture of iodine, except that it soils your instruments and hands and the patient's clothing, and so I prefer to use the injection, which I believe is recommended by Levis of Philadelphia, and which you will probably find quite effective, especially in conjunction with the silver wire drainage plan that I shall show you. If you use iodine, oil your trocar, and use potash or ammonia to remove stains. The injection of any stimulating liquid into the sac of the tunica vaginalis causes more or less pain, and sometimes considerable shock, so it is well to etherize your patient if he prefer it.

The inflammation which is induced, causes some orchitis and distress of which you should warn your patient previously, with encouraging assurances that with rest and poultices, these apparently bad symptoms will qnickly subside, and that the cure is quite certain to follow. Strapping the testicle for chronic orchitis, was formerly a favorite procedure, and is sometimes useful after puncture of hydrocele. But like a plaster of Paris bandage for fractures, strapping must be skilfully done to be servicable; otherwise, in both cases the treatment is rather productive of harm than of good. In very large hydroceles it is not advisable to excite too extensive an inflammation, and a simple paliative treatment of occasionally emptying the sac, is best.

Congenital hydrocele is the accumulation of abdominal serum from the peritoneal cavity, in the cavity of the tunica vaginalis communis, through the open communication of the two cavities imperfectly obliterated at birth. Congenital hernia is a common complication of this affection. A properly fitting truss will cure the hernia, and also cause absorption of the fluid. Never inject the cavity of a congenital hydrocele.

Hydrocele of the spermatic cord, or encysted hydrocele, or "hydroceles en chaplet," as Cloquet called this disease, from its resemblance sometimes to a string of beads, are simply serous cysts of the loose tissue about the spermatic cord, and are spindle shape in appearance, and are single or several in number superposed one above the other, and vary in size from a pea to a pullet's egg. They are easily recognized and readily cured, generally by a small incision or puncture and evacuation of the liquid, and they do not usually require the injection of an irritating fluid. If a cyst of this kind exist at or near the external abdominal ring, then such a tumor may be mistaken for an inguinal hernia. An exploratory

puncture with an aspirating needle may be needed to establish the diagnosis.

I shall now invite your attention to another very common disease known as varicocele, and for which, formerly there were a number of ingenious methods devised for its cure, and which consisted in the obliteration by ligature, or by other means, of the enlarged veins of the spermatic cord. Varicocele is a varicose condition of the veins of the spermatic cord, just as varix of the saphenous veins is an enlarged condition of the veins of the lower extremities. Consequently, the same principle of treatment usually prevailed in the operations for varicocele as in those for varix of the legs. Delpech, a French surgeon, operated on a medical student for double varicocele, which, however, is an extremely rare disease; and having obliterated either the spermatic arteries, or the vasa deferentia during the operation, the patient became impotent and sterile, and in his despondency assassinated this eminent surgeon.

Varicocele is expressively described as feeling, when handled, like a bunch or bag of earth worms; and this symptom, when well marked, will enable you to recognize the disease with your eyes shut. So, therefore, in its usual and uncomplicated form, this disease is of extremely facile diagnosis.

Varicocele is a disease of young men, of about the age of from eighteen to twenty-five years, and is never dangerous to life, unless it be from some of the operations, formerly much practiced for its cure, and which are now happily adandoned by most surgeons. In fact, as in varix of the lower extremities, mechanical means now replace the former operations for obliterating varicose veins; and a well fitting suspensory bandage for the support of the contents of the scrotum is better than all the operations. The usual operations for the cure of varicocele, have always seemed to me irrational; because, to obliterate a vein or stop circulation through it, implies the establishment of a collateral venous circulation, whether this be attempted on the sephenous veins, or on those of the spermatic cord. If the ligatures are numerous, or embrace too many veins, the vitality of the part must become impaired, and in the case of the testicle, atrophy may result.

Varicocele is, almost without exception, seen only on the left side; and when observed on the right side is generally double. The left testicles always hangs lower than the right, and this is assigned as one cause for the occurrence of varicocele on the left side. Another is, that the left spermatic vein empties at a right angle into the left renal, while the right spermatic vein empties at an acute angle into the ascending vena cava. The sigmoid flexure of the colon, which is on the left side, if distended with fecal accumulation may, by pressure on the spermatic vein,

favor varicocele; and, in fact, any compression of this vein at the inguinal canal, or at any part of its course, or any inflammation of this vein and partial abstruction of it, may cause varicocele.

While mechanical obstruction is an undeniable exciting cause of varicocele, yet the unrelieved sexual longings of a period of life of the greatest sexual activity, strongly favors congestion of the veins of the cord, and the development of this disease. In the healthy young man from the age of twenty to twenty-five years, the sexual instincts are manifested with the greatest force, unless repressed by engrossing persuits which engage the mind, and fatigue the body. It is difficult for the young man at this age to become unconscious of the promptings of his sexual desires, and if he has varicocele, he should divert his thoughts as much as possible from all things that excite erotic cravings; and if circumstances should favor, seek in a properly assorted marriage, that natural and orderly regulation of the sexual function, that is curative of varicocele, and which is also promotive of mental quietude and physical health. The hypochondrical feelings which this disease, and some others of the genital organs excite in the male, should be dispelled as far as possible, by pointing out to your patient the groundless causes of his despondency; and you should advise him against operations, as useless generally, and as not unattended with danger of impotence; and tell him that sometimes fatal results have attended this seemingly benign operation.

I believe the day has passed when we should recommend, as the French called them, "operations de complaisance;" and even the operation for shortening the scrotum, by excising its most dependant part, is not justifiable, except in possibly very rare cases, because, a good suspensory bandage may be made to take the place of a tight scrotum, just as the elastic stocking may be made advantageously to displace the operations for varix of the legs. Therefore, consider well the necessity for an operation for varicocele, before you decide on operative interference; and at first, give the suspensory bandage and the application, every morning, of cold water to the parts, a fair trial before you think of using the figure of 8 hare lip suture, the subcutaneous ligature, the clamp, or injections of persulphate of iron into the vein, to procure coagulation of the blood with a view to obliteration of the vein. In these operations there is always a good chance for failure; and besides danger from thrombosis, pyæmia, and scarcely less serious is the danger of obliteration of the spermatic artery or duct, and atrophy of the testicle.

LECTURE IX. ORCHITIS.

GENTLEMEN:

The case of hydrocele which you saw me operate on, and which some of you examined subsequently, is doing well. There are no signs of a return of the disease, and the cure will probably be permanent.

This morning, I ask your attention to the subject of orchitis. This is an inflammation of the body of the testicle, and is of rare occurrence; but does sometimes result from blows, compression, or other injuries to the testicle. This organ may, like others of the system, becomed inflamed without assignable cause. Or orchitis may occur in rheumatic, or gouty patients, affecting the tunica albuginea, or fibrous envelope of the gland. Orchitis is rather common towards the declining period of mumps, or parotiditis, and has long been observed to be a sudden, and apparent transferrence of inflammation of the parotid gland to the testicle in the male, and to the mammæ in the female, through a certain sympathetic action; and this translation of the disease to the testicle is called metastasis of the mumps.

Gonorrhœal orchitis, or inflammation of the epididymis, is, of all the forms of orchitis, the most frequent, and does not affect the parenchymatous tissue, or body of the testicle; but in mumps the epididymis is stated to be rarely, if ever, the seat of inflammation. But this is probably of more frequent occurrence than is generally supposed. Neither in acute, nor in chronic orchitis, as a rule, does the testicle suppurate. In certain cases, however, as in phthisical or scrofulous patients, or in those with syphilitic gummy tumors of the testicle, known as benign fungus of this organ, indolent concrete masses form, and afterwards fluid particles of pus make their appearance. In the orchitis of mumps, or in gonorrhœal epididymitis, the glandular tissue of the testicle, usually escapes permanent impairment.

Practically, the disease of the testicle with which you should become the most familiar, because the most common, is gonorrhœal orchitis, which is more accurately called epididymitis. As the epididymis is a part of the testicle, and as the name orchitis is so commonly used, it does no harm to retain the name if you only remember that the part of the testicle, which is the seat of the disease, is the epididymis, and that nearly always the tunica vaginalis is inflammed, causing some effusion into the cavity of this serous sac. It was formerly thought, that the suddenness with which a gonorrhœal discharge almost disappears, or diminishes in quantity on the supervention of orchitis, that there was a metastasis of the gonorrhœal inflammation to the testicle; but such is not the case. It is during the chronic stage of gonorrhœa, or during the existance of gleet, or in

patients with chronic inflammation of the deep portions of the urethra, that orchitis is most apt to occur. The extension of the inflammation along the course of the vas deferens to the epididymis, is now known to be the cause of orchitis. It is well for you to recollect, that inflammation of the urethral mucous membrane extends with great rapidity, occasionally, causing cystitis or orchitis, and that in some cases, the inflammatory action may extend with rapidity along the ureter to the kidney, and cause pyelitis.

After the subsidence of the inflammation of the epididymis, it remains very frequently enlarged and indurated, with knotty swellings at its tail. These irregular little swellings are due to the presence of exudative or plastic matter between the convolutions of the spermatic duct at its inflected parts; and finally, the organization of plastic material into dense fibrous tissue. More or less complete obstruction of the vas deferens occurs, as the consequence of this chronic inflammatory process; and the duct of the epididymis above the globus minor becomes dilated by the accumulated secretion of the testicle, and at the tail of the epididymis or globus minor, the duct may become impermeable, and entail on the patient sterility, especially in cases of double orchitis, which have been neglected or badly treated. In some old cases of epididymitis, having occurred many years previously, the epididymis is knotted with little masses that are exceedingly dense and firm and that certain calcareous deposits. In cases of long duration, the coats of the vas deferens are also thickened, and indurated, and there exist often old adhesions of the sac of the tunica vaginalis.

Weak and delicate patients are probably those most exposed to attacks of gonorrhœal orchitis, because in such, the urethral discharge is less apt to yield promptly to treatment; and neglect to support the testicles, or the use of caustic injections, may expose them, as well as the most robust men to an attack of orchitis. Epididymitis occurs generally about the sixth week of an attack of gonorrhœa, and its appearance is largely due to the different susceptibility of the patients, and is influenced by the presence of patches of inflammation in the deep parts of the urethra as in gleet ; or in any inflammation of the prostate, bladder or deep urethra.

Sigmund found the left testicle attacked in ⅔ of the cases out of 1342 patients reported with orchitis; but other observers have noted that the right testicle is the one most commonly affected.

In a patient with gonorrhœa, who complains of weight and aching in the testicle, uneasy sensations in the groin and along the spermatic cord, advise him to at once put on a well fitting suspensory bandage, and to remain in a recumbent position for a day or two, and he may avoid an attack of orchitis; because these are unmistakable premonitory symptoms of the disease. If it is not prevented by these simple measures, the symp-

toms increase, the cord becomes swollen, and painful to the touch, the pain irradiates towards the hip, crest of the ilium, and there is a certain feeling of fulness about the perineum, and uneasiness about the bladder, and increased aching about the testicle, which begins to throb, and become sensitive to the touch, and heavy and cause a painful dragging sensation on the cord. The testicle seems to increase to twice its size, the skin of the scrotum becomes intensely red and shining, and there is always some effusion into the sac of the tunica vaginalis, which being inflamed and acutely sensitive, its sudden distention causes the parts to be very painful, so that they should be handled with great care, and properly supported. The fever which accompanies and precedes an attack of acute gonorrhœal orchitis is often very great, and is sometimes attended with nausea.

There is no disease in which you can show the immediate benefits of a judicious management of the case so promptly and effectually as in the proper treatment of orchitis. Gaussail, a French physician, found the mean duration of epididymitis in 73 cases to be from 30 to 35 days; but under proper treatment the duration of the disease may be abridged to a week. After an imperfectly cured orchitis, there is frequently some pain following the sexual act, and this should warn the patient to seek medical advice. I would like to remind you that sometimes infants or very young children have orchitis; and that often the cause is quite unknown. But do not forget that there is a syphilitic disease of the testicle, sometimes called benign fungus, that is most common in childhood.

After what I have told you, it is quite impossible to fail to recognize a case of orchitis, except possibly in a case of an inflamed testicle, retained at the abdominal ring, and which might be mistaken for strangulated inguinal hernia.

If the disease is in its acute stage, rest in bed for a few days is absolutely necessary. Let me advise you not to content yourselves with simply supporting the testicles with a cloth or pillow placed between the thighs, but adopt the plan recommended by Curling, and apply a large silk handkerchief, if the patient should have one, or if not, a large piece of cloth folded in triangular form, and to which is sewed two narrow strips of muslin, about eighteen inches long at the center of the base of the triangle, formed by the folded edge of the handherchief. Tie a narrow piece of cloth, or long handkerchief around the waist, just above the hips; then pass the folded edge of the handkerchief carefully, under the scrotum, passing also the narrow strips of muslin under the thighs, and carrying them up behind, or rather to one side, tie them to the band or handkerchief fastened around the waist. Now draw up the two pointed corners of the handkerchief, which are in front, and fasten them to the encircling

band around the waist. In the early stages of acute gonorrhœal orchitis, the testicle and scrotal parts are often two or three times their natural size, and it is impossible, generally, to obtain a suspensory bandage large enough, and that will fit the patient comfortably; besides the handkerchief, if large, will allow of the use of poultices.

I wish particularly, that you remember that a fair sized silk handkerchief, which is so soft and comfortable to the patient with acute orchitis, is much to be preferred to any other means of suspension of an acutely sensitive and inflamed testicle.*

I know of no remedy that will allay the pain, and snbdue the inflammation of a swelled testicle so effectually, as a tobacco and flaxseed meal poultice. This application was used by some New York surgeons long before it became much known, and Van Buren and Keyes have probably done more than any others to spread the knowledge of its use. A hot flaxseed meal poultice to which has been added previously, about half a paper of fine cut chewing tobacco, should be applied fresh two or three times a day, until the swelling and pain subside. A piece of oil silk should be placed outside the poultice to prevent evaporation. This poultice gives relief quickly, and in the course of a few days, the swelling is so reduced that an ordinary suspensory bandage may be worn with comfort. After this, paint the parts twice a day with a mixture containing a quarter to half an ounce of tincture of belladonna, and an ounce and a half of Squibb's fluid extract of ergot. During the severity of the pain, or for the first few days, you may to advantage in robust subjects, give eight grains of Dover's powder, with two grains of calomel at night, with a view to quiet pain and prevent subsequent induration and thickening of the epididymis, and thus preserve unimpaired the function of the testicle. You will find, even in summer, that cold applications rarely do good, and in my opinion, they cause harm, and retard recovery. To support the testicle well, and narcotize it with a tobacco poultices, will yield you excellent results.

You should suspend the use of all stimulating balsamics and give your patient demulcent and alcaline drinks. Sometimes it may be advisable to apply a few leeches to the cord, or to puncture the tunica vaginalis; but this will rarely be required. Strapping the testicle has almost gone out of use, and this is due largely to the inefficient manner in which it is usually done; and unless well done, more harm is apt to result than good. But strapping is a valuable resource sometimes in chronic orchitis;

* Since this lecture, this application of the handkerchief, or Curling's method, which is so simple, yet so useful, was shown to the class by the lecturer at the County Hospital, which in future will afford abundant clinical material for teaching.

but I think that with a well fitting suspensory bandage you can usually dispense with strapping. A certain attention to constitutional treatment is very important in many cases. An occasional laxative and an unstimulating diet are required for the robust; but quinine and tonics are useful for patients in feeble general health. For cases of chronic orchitis, in which you suspect a syphilitic taint, give the bichloride of mercury in 1-16 of a grain doses, with doses of 20 drops of muriated tincture of iron. And do not neglect a trial with large doses of iodide of potassium; but of this, I shall speak to you more hereafter. It was taught, I believe, by Velpeau aud others at one time, that incisions of the testicle could be made without much fear of harm to this organ, to relieve the pain, and tension caused by orchitis. I advise you to be careful how you incise the testicle, because hernia of the seminiferous structure has been repeatedly the result of such incisions, as reported by French authors, and by Curling and others.

At our next lecture, I shall endeavor to review with you the very important subjects of impotence and sterility in men.

SUPPURATION.

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Suppuration may be regarded as the process by which pus is formed, and is a common result of inflammation.

Pus may occur as an exudation from a free surface, diffused through the tissues, or circumscribed at a given point.

In general, the more intense the inflammation, the more abundant the formation of pus.

What is pus? The essential constituents are an abundance of cells and a slight amount of liquid in which they are suspended. This fluid has an alkaline reaction and closely resembles liquor sanguinis, containing several forms of albumen, fatty matter and inorganic salts.

The first thing to be studied is the pus-corpuscle, and then the theories of its formation. Embryonial cells have each a nucleus which is either round or oval. By division of the nucleus and a requisite nutritive supply each cell will give birth to two others; but when the hyperplasia

is very active, cells will be found containing several nuclei. When the nutritive material is cut off from them, the division of the nucleus continues, but the cells no longer divide, and now from two to five nuclei are present; such cells are named pus-corpuscles. Pus-cells may be present in a tissue in large numbers though not visible to the eye as liquid pus. Granulation-tissue and the secretions of mucous and serous surfaces normally contain pus corpuscles in varying quantities.

The dead pus-corpuscle, as seen under the microscope, is either spherical, spheroidal or irregular in outline, semi-transparent, varying in size from 10 mmm., or $\frac{1}{2500}$ inch, to 7 mmm., or $\frac{1}{3571}$ inch in diameter, and contains a varying number of granules and two or more distinct nuclei. Acetic acid causes these cells to swell up, the granules to disappear, and the nuclei to stand out in clear relief. The size of the corpuscle and the number of the nuclei present manifold variations. When the nuclei are numerous they are generally small, not always circular, and often exhibit a peculiar luster which suggests a homogeniety of their structure. The supposed specific nature of these cells gave them the name pus-cells or corpuscles. This theory, however, is now regarded as an error, from the impossibility of distinguishing between the pus-cells, certain white bloood-corpuscles, and wandering cells.

The mode of origin of pus has been a subject of much controversy, and numerous theories have been advanced regarding the same. The liquid portion comes directly or indirectly from the blood, and represents the exuded liquor sanguinis. Only two theories are at present admitted by most pathologists. Pus-cells have a double origin; first, from the blood in the shape of migrating corpuscles, and second, from the proliferating cell elements of the inflamed tissue. While studying inflammation we found a large number of white blood-corpuscles leaving the vessels, and later, we have found cells rapidly dividing, thus in all probability greatly increasing the production of pus.

The cell elements of the inflamed tissue are also the seat of certain changes, the cells multiplying by division, thus forming new cells. With intense and long continued inflammation, the newly formed elements are incompletely organized, and the tendency to form permanent tissue is at the minimum. Some of these incompletely organized cells constitute pus-cells. The surrounding tension prevents complete organization, destroys their vitality and the cells perish. Pus-cells are believed to originate from any cellular tissue excepting the nerve-cells, either by division or endogenous multiplication.

In the early stages of an inflammation the pus-corpuscles come almost exclusively from the emigrating corpuscles, but later from the cell elements of the tissue involved. Consequently the more abundant

the escape of blood-corpuscles, and the more active the cell proliferation, the greater will be the production of pus and the more likely will it be to become centralized and form an abcess.

Pus exercises a most injurious influence, being apparently endowed with the power of absorbing or liquefying all tissues with which it comes in contact, and for this reason is a very destructive element in intense inflammations.

Pus may become confined in the tissues and undergo a variety of changes:

First. It undergoes fatty metamorphosis; the pus-corpuscles being changed to fat-droplets, when they are ready for absorption; observed when pus is old. Under the microscope four or five fatty refracting granules will be seen in the pus-cells, and now the cells are not affected by acetic acid. When the fatty change is more complete the corpuscles become distended with fatty granules, and appear under a low power as dark masses from .015 mm. to .020 mm. in diameter, named "corpuscles of Gluge." The corpuscle of Gluge is found under a variety of circumstances.

Second. The liquid portions may be absorbed, the cells atrophy, and a cheesy mass result, which may finally become calcareous, by the production of cholesterin chrystals and the separation and deposition of the inorganic salts. Pus-cells from cheesy masses remain unaltered when water or acetic acid is added.

Third. In gout the pus-cells sometimes contain acicular crystals of sodium urate.

Fourth. With a large escape of red blood-corpuscles, the pus-cells may become pigmented.

Fifth. Pus from diseased bones undergoes a serous, acid transformation. Such pus is said to contain lactic acid, the corpuscles swell, the the protoplasm dissolves and the nuclei are set free. Such pus the surgeon soon learns to recognize as coming from a bone abcess. A similar destruction of pus occurs when in contact with considerable water.

The physical characters of pus are varied, depending upon the nature and constitution of the patient or the part where it is formed. In a healthy constitution, the result of a sthenic inflammation, the fluid is opaque, creamy, thick, smooth, slightly gelatinous to the touch, of a yellow-white color tinged with green, having a faint odor, alkaline reaction and a specific gravity varying from 1.021 to 1.042, average range 1·030 to 1.033.

Chemically pus contains various albuminous compounds, fatty matter, salts, chiefly chloride of sodium, usually gives off a little ammonia, pus-globules, granules and is said by some to contain pyene.

Pus of this nature is termed *laudable*, or *healthy*. Pus tinged with blood is termed *saneous;* when thin and watery, *serous;* when thin and watery with numerous small flakes, *ichorous;* when loaded with cheesy flakes, *curdy;* when diluted with mucous or serum, *muco-* or *sero-pus; fetid*, when from a bone-abcess or one in the immediate vicinity of the alimentary tract.

Pus from a bone-abcess moreover contains a large amount of the phosphates and carbonates and often small spiculæ of bone. If the patient is suffering from any specific disease the pus will carry the poison.

At times we are called upon to decide whether a fluid is pus, healthy mucous, turbid serum, softened fibrin, atheroma, tubercle, cancer, blood or milk. To distinguish it from healthy mucous there is no difficulty; but when mucous is changed by inflammation and mixed with exudation cells it is often impossible. Turbid serum and softened fibrin are minus the pus-cell. The atheroma is recognized by the cholesterin crystals; the tuberculous and cancerous mass are without pus-cells. When mixed with blood it is almost impossible to distinguish the pus-cell, when mixed with milk as in lacteal abcesses there is an abundance of fat-droplets. The recognition of pus is only of practical value in turbid serum, blood, and milk.

The general conditions which influence the tendency to suppuration are:

1st. The state of the blood.

2nd. The seat of the inflammation.

3rd. The degree and character of the inflammation.

4th. The local condition of the part.

1st. *The state of the blood* refers to the general constitution, whether it be healthy or contaminated by phthisis, scrofula, syphilis or any constitutional vice. With a deteriorated constitution the tendency to suppuration is great, while in the healthy, the plastic effusion is more common.

2nd. *The serous membranes* are prone to a fibro-plastic exudation; the *mucous*, to purulent; and the *areolar* plains both to the fibro-plastic and corpuscular. The locality, however, is subservient to the constitution in a great measure, as seen in croup and diphtheria where we find a plastic exudation upon the mucous membranes. In pyæmia and septicæmia pus is poured into the pleural cavity.

3rd. *The degree and intensity* of the injury and inflammation. The more decided the inflammation, the more likely the formation of pus.

4th. *Local conditions.* Subcutaneous wounds, as in tenotomy, rarely suppurate, while open wounds always suppurate. The lodgment, however, of foreign bodies, as extravasated urine, a piece of dead bone, or a

bullet, excites an intense subcutaneous inflammation, speedily followed by suppuration, which is nature's method of removing the body.

Suppuration may be established in three days or it may take weeks, so it may terminate in a few days or continue for months or even years.

Symptoms. The symptoms of suppuration are both local and constitutional.

Local symptoms. When a mucous membrane is about to suppurate, it first becomes red, painful, hot, dry and swollen, followed by an increased flow of mucus, then muco-pus and finally pus.

When the subcutaneous tissue, or an organ is about to suppurate and form an abscess, the ordinary symptoms of acute inflammation are modified. The skin over the part affected becomes glazed, red, shining, swollen and tense, followed by œdema and softening of the underlying parts, with fluctuation. Pus may be produced and the first local sign of its presence be fluctuation.

Constitutional symptoms. When suppuration is about to supervene, the acute inflammatory symptoms subside, and the interruption is marked by a chill, slight or long and continued rigors. The fever is less, often intermittent, the pulse becomes soft but continues quick. If the formation and discharge of pus be great, producing a severe drain upon the system, the patient will rapidly become weak, nutrition be impaired, and a hectic condition developed. Pus may accumulate in large quantities and no hectic occur, unless the abscess be opened. By *hectic*, or *hectic fever*, is meant a condition in which fever, debility and constant irritation are associated, followed by emaciation, loss of strength and death. The *symptoms* are a small quick, compressible pulse, ten or twenty beats above normal, elevation of temperature with slight exacerbations after each meal and a decided exacerbation toward evening, cheeks flushed, eyes glistening, pupils dilated, the tongue coated but red at the sides and tip. There is profuse sweating, purging, and abundant red deposit in the urine; the sweating and diarrhœa often alternate, melting the patient away, and are then termed *colliquative.*

A suppuration may be *acute or sthenic, chronic or asthenic, specific, circumscribed, diffuse, superficial and deep.* The suppuration may be located upon a *mucous* or *serous* surface, or the surface of an ulcer or wound, giving rise to a purulent secretion.

Pus may accumulate subcutaneously or in an organ giving rise to the condition known as an abscess. An *abscess* is a subcutaneous collection of pus, and in structure consists of pus, in the midst of tissues, walled in on all sides by a fibro-plastic layer of variable thickness which consolidates the tissues at this point and forms a complete barrier between the healthy tissue and the pus. This fibro-plastic layer is nature's

method of walling off the living from the dead, and is exceedingly vascular on the side next the healthy tissue. This layer has been termed a *pyogenic membrane;* but in acute abscess incorrectly, for there is no proof that it forms the pus but rather to the contrary; for it is only after an abscess has been opened and become quite chronic, that this layer reaches a stage of organization sufficient to produce granulations and pus. When this occurs, as is well seen in sinuses and old psoas abscesses, the limiting wall may secrete pus and be truly a pyogenic membrane.

An abscess may be *acute, chronic, symphatic, diffuse, metastatic, puerperal or specific.*

The acute or phlegmonous abscess forming in the areolar tissue is the one taken as a type to study from.

The *cause* is inflammation, but the cause of the inflammation we cannot always determine.

When an abscess is about to form, the parts which previously were very much inflamed, become swollen, accompanied with throbbing pain, the skin becomes shining, glazed and purplish in color. If, however, the abscess be deep-seated, or under dense tissue, the superimposed tissues become œdematous and brawny. As the swelling approaches the skin, a point of softening and fluctuation can be detected, and there will be some bulging of the skin. This condition is commonly spoken of as the pointing of an abscess, and indicates that the abscess is going to burst and discharge its contents.

The pathological changes which are going on during the formation of an abscess are the accumulation of white or lymphoid cells at a circumscribed point, and softening and breaking down of the tissue. This process is accompanied by a surrounding inflammation, and in a fairly healthy constitution by the throwing out or formation of a fibro-plastic layer which confines and limits the accumulation of pus-cells and destruction of tissue. This layer is called the limiting membrane, and in many books is described under the name "Pyogenic membrane." There is probably a pouring of the blood cells into the cavity from the vessels just behind this thin limiting membrane and a division under tension of the cells when once in the cavity. This increase of cells explains the tendency of an abscess to try to reach the surface, which may be the skin or a mucous or serous membrane. If firmly bound down by dense fasciæ the point of natural opening may be at a considerable distance from the main collection. The point of opening will be in the direction of the least resistance or at the most dependent point. The internal accumulation causes increasing pressure against the weakest, which excites a local inflammation and softening. The cells rapidly crowd into the softened channel, and finally reach the surface. This is essentially the

pathology of pointing. As this softening reaches the surface, the skin is first livid tense and œdematous, indicating interference with the circulation. At the summit of this point as the abscess presses forward, the skin becomes less tense and finally relaxed; the cuticle peels off, the skin sloughs and the abscess' contents are discharged. In most cases an acute abscess if left to itself, will burst in this way through some of the free surfaces. When an abscess is located under dense structures it may burrow among important parts and even open into a joint, thus doing considerable damage. There are rare cases in which the pus is absorbed and the abscess disappears. After the abscess has burst or been evacuated, its walls, which closely resemble a granulating surface, may come together and completely close the cavity, or unite incompletely leaving a sinus or fistula.

ORIGINAL TRANSLATIONS.

THE HEREDITARY TRANSMISSION OF SYPHILIS.

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(*Continued from April Number.*)

IX. *Intensity of the Heredity.*—That there are different degrees in the inheritance of syphilis; that in a spontaneously disappearing syphilis of the progenitors a gradual and constant decrease in the intensity of the poisoning is observed in the progeny; that these different grades of the poisoning manifest themselves in the earlier or later interruption of the pregnancy, in the greater or lesser degree of viability, and the earlier or later outbreak of syphilis in the children born at term—all these conditions have been, in the former portions of this work, repeatedly spoken of and casually discussed, according as the opportunity therefor presented itself. But, apart from the theoretical side of the question thus far specially referred to, these conditions have also an eminently practical importance, and deserve for this reason alone an extended and detailed consideration.

The Law of the Spontaneous Gradual Decrease (Weakening) of the Intensity of Syphilitic Heredity.—This law, which had already been mentioned by many writers, and extensively discussed by several (Diday, Roger, 1865), found a positive confirmation in all our observations. The

regularity with which this gradual decrease repeated itself in almost all of my 119 tabulated cases, and also in many others not included by reason of their incompleteness, is simply surprising; and the few for the most part unimportant exceptions, if even they do exist at all, give at least, by their relatively small number, but a further confirmation of the general rule.

In consequence of the importance of this subject we will not be illiberal in regard to examples, and will begin with a *complete* series, in which the beginning of the transmission power, as well as its extinction, was markedly pronounced.

CASE XIX.—*Mother alone Inoculated after the Birth of the First Child; the entire Succession of Children up to the Extinction of the Power of Transmission.*

1. 1863.—A girl, always healthy.

Three months after the birth of the child the mother contracted syphilis, and was treated in the hospital.

2. In the fall of 1865.—A boy, still-born in the seventh month.

3. 1866.—A boy, born in the seventh month; lived five hours.

4. 1867.—A boy, still-born at term.

5. 1869.—A boy, born at term; during the first week had an eruption over the whole body, which remained until his death at four months.

6. 1870.—In January, a boy at term; fell ill at six weeks with a maculo-papular exanthema; relapse at fifteen months; is now badly nourished, rachitic, with a characteristic physiognomy.

7. 1874.—In February, a *healthy* boy.

This case, on account of its completeness, may be regarded as a typical one. In most of the remaining cases the series under investigation forms only sometimes a greater, sometimes a lesser fragment, in a supposed perfect succession; because in one case the beginning, in another the end, occasionally both the beginning and the end, are equally wanting. But even in these fragments the great regularity in the decrease is unmistakable.

We divide the cases into several categories, according to the different conditions of the parental disease.

A. *Father Inoculated before Marriage; Mother healthy.*

CASE XX. 1. November, 1871.—A girl, born in the eighth month; very feeble; lived one day.

2. End of 1872.—A boy, still-born at term.

3. February, 1874.—A boy, born at term, apparently healthy; when two weeks old had coryza, maculo-papular exanthema, and diffuse syphilitic infiltration of the skin upon the face and soles of the feet; in

the third week had swelling of almost all the first and second phalanges of the fingers, and several of the metacarpal bones. He recovered.

CASE XXI. 1. 1870.—A premature birth, dead, in the eighth month.

2. 1872.—A girl at term; had a general exanthema on the eighth day; was cured.

3. 1874.—A girl at term; in the seventh week outbreak of a maculo-papular eruption; infiltration of the skin upon soles of the feet; recovered.

CASE XXII. 1. 1869.—A female child, born prematurely in the eighth month, with spots and vesicles; lived one day.

2. 1870.—A boy, born nearly at term; died just after birth.

3. 1871.—A boy, had an eruption at the end of a week; lived four months.

4. 1872.—A female child; fell ill also in the second week; lived six weeks.

5. 1873.—A boy, born healthy, but fell ill in the third week with coryza and a macular eruption; soon thereafter had infiltration of the skin of the toes. Later he suffered from an obstinate pustular eruption and furuncles. He is now two years old, strong, slightly rachitic.

CASE XXIII. *Regular Succession Interrupted by an Interval of Six and a Half Years.*

1. Middle of 1866.—A girl, still-born in the seventh month.

2. Beginning of 1868.—A boy, still-born in the seventh month.

3. October, 1874.—A female child, healthy at birth; at the end of the first week had a macular eruption over the whole body; severe relapses with spots and papules at the third month; extensive diffuse infiltration of the upper lips, the skin upon the hands and feet. After her recovery there remained, for several weeks, isolated suppurating subcutaneous tubercles. Since then healthy, in consequence of mercurial treatment.

Here also, among many others, belong the very marked series in Cases III, IV, IX, X and XVIII.

B. *Father Inoculated after Marriage; Mother remains spared.*

CASE XXIV. 1. 1867.—A girl, died at three months with intestinal catarrh; was otherwise healthy.

During the lying-in her lover contracted syphilis, and went to the hospital, where he was treated for four months.

2. 1870.—A boy, still-born in the eighth month.

3. 1872.—A female child at term; very feeble; had a macular eruption after ten days, afterwards moist papules, and died when five months old.

4. September, 1873. — A girl, at birth strong and apparently healthy; had coryza at three weeks, at four weeks a macular eruption of slight intensity; at five weeks laming of the left upper extremity, resulting from painful swelling of the epiphysis of the head of the humerus. A cure was effected after several weeks; at three months had a blooming appearance; relapses in the fourth, seventh, tenth and fifteenth months; finally condylomatous growths upon the lips and mucous membrane of the gums. Is now entirely cured.

Cases V and VI also belong here.

C. *The Mother alone Inoculated before Marriage.* See Case XII.

D. *The Mother Inoculated in a Previous Marriage; in a Succeeding Marriage with a Healthy Man gives Birth to a Child also Syphilitic.*— Case XXV. In her *first* marriage, five children all die, from two to three years old, with pulmonary diseases. Early in her *second* marriage, in 1865, the mother was inoculated by her husband.

6. 1868.—A premature birth during the seventh month, still-born.

7. 1870.—A boy, born at the eighth month; had an eruption in the first week; was treated successfully; died with intestinal catarrh at the age of nine months.

8. 1871.—A girl, fell ill also in the first week; was cured in two months, and died from bronchitis when one year old.

In her *third* marriage to a healthy man:

9. *February*, 1874.—A boy, at birth comparatively healthy; suffered in the third week with a general macular eruption; in the third month with papules and diffuse infiltration of the skin of the face. Was cured. In the tenth month, relapses, with papules upon the skin, and the mucous membrane of the mouth. Since then healthy. *See* further, Case XVII.

E. *After the Birth of Healthy Children the Father is Inoculated, and by him the Mother.* Case XXVI.

One to five children live and are healthy. The fifth is born in 1866. At the end of 1866 both parents contract the disease.

6. *March*, 1867.—An abortion at three months.

7. 1868.—A boy, born living at the seventh month; the skin peeled off (according to the statement of the mother); death occurred after five days.

8. 1869.—A boy, still-born at the eighth month.

9. 1871.—A female child, born nearly at term; died in one hour.

10. *September*, 1872.—A girl, at birth seemingly well; soon afterward had very severe coryza; at three weeks a general exanthema; later very obstinate ozæna, with sinking in of the nose; very obstinate ulcer-

ating papules; at eight months, relapses with mucous patches of the tongue and laryngitis; at two and a half years, relapses with condylomata. At present rachitic.

11. *October*, 1873.—A boy, very strong at birth; shortly before the end of the third month had a very slight, small papular eruption, which disappeared after eight days' treatment. In the eleventh month, relapses with condylomata, since then healthy.

See further the complete series in Cases XI, XV and XVI.

The same regularity which was observable in the series thus far reported repeated itself in the by far greater majority of my cases, in which certainly slight variations occasionally took place; as, for instance, a seven-months' premature birth *following* one at eight months, a still-born child at term *after* a living but non-viable one, and similar instances. But even greater irregularities, however, which occurred altogether in but ten of my 119 cases, never disproved the idea of the successive weakening of the heredity; because in one or two births at the most a retrogression presented itself toward the next higher grade of intensity; but on the whole, however, the law of the successive decrease, even in these *irregular series*, remains indisputable.

CASE XXVII.—*Father Inoculated Several Years before Marriage; Mother healthy; a Retrogression in the Second and Third Births.*

1. 1867.—A boy, still-born in the seventh month.
2. 1868.—A girl, still-born in the eighth month.
3. 1870.—*Abortion in the second month.*
4. 1871.—A boy, *still-born in the seventh month.*
5. 1872.—A boy, born in the eighth month; suffered after a few days with an extensive eruption and violent snuffles; was always feeble, and died in the third month, without mercurial treatment.
6. 1873.—A boy, born at term; at the third week had coryza, papular eruption, and infiltration of the soles of the feet; was cured in a few weeks with proto-iodide of mercury, but always remained feeble. At the end of a year was unmistakably rachitic and very anæmic, with pronounced specific physiognomy. He began to walk only after two years. No relapses.

CASE XXVIII.—*Mother Inoculated early in her First Marriage, the Diseased Succession continuing during her Second Marriage to a Healthy Man; Isolated Retrogression in the Fourth Birth.*

First marriage:

1. 1862.—A female child, still-born at the seventh month.
2. 1863.—A boy, almost at term; lived one hour.

Second marriage to a healthy man:

3. 1865.—A female child, very feeble; lived eighteen days.

4. 1866.—*A female child, still-born in the seventh month.*

5. 1871 —A girl at term, very feeble; had an eruption soon after birth; lived twenty-five days.

6 1873.—A boy, had an exanthema at four weeks, and infiltration of the soles of the feet; at the fifth month a relapse, with a macular eruption and infiltration; at eleven months scaly papules. Since then healthy, but feeble.

7. 1875.—A healthy boy.

CASE XXIX.—*Mother Inoculated One Year and a Half before Marriage; treated; Father healthy; Isolated Retrogression in the Fourth Birth.*

1. 1868.—A female child, still-born in the seventh month.

2. End of 1868.—A female child, still-born in the eighth month.

3. 1869.—A boy, nearly at term; very weak; had an eruption upon the feet immediately after birth; died in ten days.

4. 1870.—*A female child at term, still-born.*

5. 1871.—A boy; in the third week had a severe papular eruption, with formation of crusts; diffuse infiltration of the skin of the upper and lower lips, also with formation of crusts; infiltration of the soles of the feet. Later, subcutaneous tubercular growths. Cure.

CASE XXX.—*The Mother, who has a Healthy Child from a Former Marriage, is Inoculated by her Husband at the Beginning of a Second Marriage. A Retrogression in the Fourth Birth.*

1. 1864.—A girl, always healthy.

The mother is inoculated in her second marriage, 1865.

2. End of 1866.—A girl, born in the seventh month, with pemphigus bullæ; lived three days.

3. 1867.—A boy, born in the eighth month, with pemphigus bullæ (while the mother was in the hospital); lived thirteen days.

4. 1868.—*Abortion in the forth month.*

5. Middle of 1870.—A boy, born in the seventh month; in fourteen days had coryza, a papular exanthema, infiltration of the soles of the the feet, successfully treated. A relapse at the fifth month. Is later rachitic; at present very feeble, suffering frequeutly from inflammation of the eyes.

6. 1872.—A boy; had a very slight exanthema in the tenth week, which was soon cured; is now healthy.

7. February, 1874.—A boy, entirely healthy.

It is evident, then, even with these irregularities, which sometimes (as in Case XV) are induced by an intercurrent mercurial treatment, but in the other cases are based upon unknown, we might say accidental, conditions, that the law of the successive decrease in the poisoning of the progeny of syphilitics is in no way changed thereby. For, in the apparently irregular cases also, we never observe a very great retrocession—such, for instance, as non-viable premature births following a healthy child; and equally as seldom, in two births following closely upon each other, do we ever find a very marked progressive step; nor has it ever been observed, for instance, that a dead premature birth has been followed in one year by a very slightly affected or an entirely healthy child. Two such births can only succeed each other without an intermediate link, when a great number of years have elapsed between both, as, for example, in Case XXIII, where the second, still-born, seven month's child, is followed by the birth of a third, viable, and slightly affected child, after an interval of more than six years.

This law is so universally acknowledged and established by such a large number of actual observations, that all theories which have as a foundation views to the contrary may be completely set aside as erroneous. When Sedoul, therefore, as late as the year 1848, could assert that still-born and strongly cachectic syphilitic children are inoculated directly at the time of conception, while those less severely affected, in whom the symptoms appear only late after birth, are infected first during pregnancy, so would this presuppose that always, after the birth of a single child infected in the manner last-named, a succession of premature and still-births must follow; which, as is well known, is never the case. When Bassereau (1852) asserts, later, that children whose parents at the time of fecundation have secondary syphilis are only affected superficially—on the contrary, that the children of those with tertiary syphilis have alone the deeper and severer symptoms of the inherited disease; and when Mandon (1856) expresses the same view, by saying that hereditary syphilis constantly has the character of that stage of syphilis from which the parents were suffering at the time of conception; so, again, this presupposes that, in a succession of syphilitic births, at first those superficially affected, and afterward those more intensely and deeply diseased children, must be born; and, as this is exactly contrary to the truth, these theories, from this ground alone, are untenable. When, finally, Hutchinson (1856), out of love for his theory of the gradual poisoning of the mother by syphilitic embryos, declares that the children born later are always more severely affected than the previous ones, this assertion finds in our observations the most positive refutation; and herewith, also, the theory of the chronic retro-infection of the mother amounts absolutely to nothing.

By the other hand, by reason of this great regularity in the decrease of the syphilitic heredity, and the infrequency and unimportance of the exceptions, we may presume to say that the grade of the fœtal poisoning and the gradual decrease of the intensity of the inherited dyscrasia are tolerably independent of the external perceptible appearances, which, as is well known, vary greatly in severity—consequently, independent of the recurring eruptions, relapses, and periods of latency of the parental syphilis; and that, accordingly, in reference to the severity of the inherited disease, the *age* of the parental syphilis, if even not to be relied upon exclusively, is nevertheless of by far greater importance than a greater or less degree in the intensity of the externally visible lesions of the progenitors just at the time of the procreation. Therefore, during the first years after the acquisition and apparent curing of his syphilis a man procreates, it may be year after year, in spite of a nearly complete latency, a child which already before birth succumbs to the disease; and, on the other hand, a woman affected with the most pernicious forms of inveterate syphilis can bear children in whom the inherited dyscrasia is only to a certain degree reflected, or in whom the inheritance can be entirely denied.

This law is still further of significant practical value for the decision of each special case, and I recommend, therefore, in every case of infantile syphilis, the exact and minute details in relation to the previous brothers and sisters, the time of each birth, the intervals between the same, the maturity or immaturity of the children, the further fate of each individual case, etc. These data, which in most cases are correctly obtainable, and, above all, for the reason that the questions appears to be entirely inoffensive, do not readily yield to an intentional deception on the part of the parents, afford, to a certain extent, an objective basis from which we cannot alone draw certain reverse conclusions upon the condition of the parents, the period of their inoculation, etc., but from which, also, the otherwise unreliable statements of the parents can be controlled in a very desirable manner, even upon the point last mentioned. In many doubtful cases the remembrance of the preceding births may be directly decisive. The differential diagnosis between hereditary and acquired syphilis, which, as a rule, is easily made during the first months of life upon objective conditions, may be associated with the greatest difficulty at a later period —for instance in the second year, when we find only isolated condylolomata, without other objective symptoms. Should it occur that the bearer of this perplexing disease be the last member of an interrupted series of viable and non-syphilitic children in the same marriage, this alone would exclude positively hereditary syphilis in this case.

The different grades of intensity in heredity are especially noticeable in three different ways:

1. In the interruption of the normal period of pregnancy through abortion or miscarriage.

2. In the endangering of the viability of the fœtus.

3. In the viable children, shown in the time of the eruption of visible symptoms.

These three points, also, are worthy of detailed consideration.

X. *Interruption of the Normal Duration of Pregnancy (Abortion and Premature Birth).*—That syphilis of the parents very frequently occasions an early interruption of pregnancy, has long since been recognized, and, as already mentioned, it was regarded by Astruc (*l. c.*), over one hundred years ago, as a cause of habitual abortion. Since that time syphilitic abortion has been mentioned and discussed by most writers, but here also we find very contrary views in relation to the frequency and essential causes of the same.

Frequency of Premature Births Occasioned by Syphilis.—Several observers have already endeavored to form statistics of syphilitic premature births; they are, however, all very incomplete, for the reason that they refer almost exclusively to the children of syphilitic women in lying-in asylums and hospitals Consequently, upon the one hand, no consideration is given to the birth of syphilitic children from healthy women; upon the other hand, they were only concerned with single births of manifestly syphilitic women, consequently with children who were conceived, for the most part, during the first stages of the maternal transmission-power; while there is seldom anything learned relative to births during the periods of latency and later stages of the maternal disease.

In 99 births from syphilitic mothers, Arneth (1851) found one-seventh of the number miscarriages, and one ninth of the children were still-born. According to Whitehead (1851), 117 out of 256 syphilitic pregnant women aborted, consequently 45 per cent. Among 80 children with congenital syphilis, Hecker (*l. c.*) found 23 to be born prematurely and decomposed. Hecker and Buhl (1861) found, in 40 children whose mothers had secondary syphilis, that 12 died before birth. Pick (*l. c.*), in 51 children of syphilitic mothers, 32 were born at term and 19 prematurely. Rosen (*l. c.*), in the Copenhagen Lying-in Asylum and Hospital together, in 161 births from syphilitic mothers, 74 were premature, therefore 46 per cent.; according to Rosen's calculation, four times as many miscarriages as in non-syphilitic pregnant women. Sigmund (1868), in two years, among 99 syphilitic pregnant women, 64 children were born at term and 35 prematurely.

The calculations already presented by me are preferable to all these, because they do not refer to single births, but to all the births, 330 in

number, which resulted from 119 marriages, in which either the father, the mother, or both parents, were syphilitic. My figures exceed the others, then not only in number, but, in what is still more important, in the variety of the material, in which the most varied conditions and stages of the parental disease are represented, as well as *all* the children procreated by the syphilitic parent.

The question, first is, to learn in how many of these marriages, as a general thing, abortions and premature births took place, and in how many there was an immunity. This is as follows:

I. Father alone syphilitic, 43 cases, premature births in 14 cases, 32 per cent.
II. Mother " " 10 " " " 8 " 80 "
III. Both parents " 23 " " " 16 " 69 "
IV. Condition doubtful, 43 " " " 18 " 42 "
Together, 119 cases, premature births in 56 cases, 47 per cent.

We have as a result, then, that in nearly half (47 per cent.) of all the syphilitic marriages abortions occurred, and that, particularly in those marriages in which the mothers were syphilitic (II. and III.), the number of miscarriages have a very high percentage (69 and 80 per cent.). This is explained only to a certain extent, by the tendency to abortion resulting from disease of the mother; to a greater extent from the fact that, as already mentioned, in those marriages in which the mother is diseased the inoculation occurs very frequently in the beginning of marriage, or very soon thereafter; consequently, the total effect of the transmission-power exists before marriage, and is not noticeable in the figures. In those cases in which in the same marriage healthy children have preceded syphilitic ones, and where, therefore, the beginning of the parental syphilis occurs positively during marriage, one or two premature births follow the healthy children almost without exceptiou; and, in four such cases which the latter were wanting, always a long succession of years elapsed between the inoculation and the first birth. From this we deduce the fact, *that children procreated during the first years after the inoculation of the parents are almost unexceptionally born prematurely.*

In such a marriage abortions do not usually follow singly (in fifty-six marriages this was the case but twenty-one times), but, as a rule, two or several succeed each other; and the number of the premature births in the marriages observed by me varied between one and nine, and yielded an average of two to three abortions in each marriage.

The relation of prematurely-born children to those born at term affected with syphilis (those healthy children born before the inoculation of the parents, as also those born after the extinction of the transmission-power, are left out of consideration) is to be seen from the following table:

	No. of Marriages.	Premature Births.	Syphilitic at Term.	Together.
I. Father alone syphilitic...	43 marriages	25 (24 ₱c.)	80	105
II. Mother alone syphilitic...	10 marriages	18 (45 ")	22	40
III. Both parents syphilitic...	23 marriages	39 (51 ")	37	76
IV. Condition doubtful.....	43 marriages	45 (41 ")	64	109
Total.....	119 marriages	127 (38.4)	203 (61.6)	330

Of 330 children whose parents were syphilitic, 127 (consequently about two-fifths) were born prematurely, and 203 (nearly three-fifths) reached the normal termination of pregnancy.

Here, also, we notice a somewhat striking difference between those cases in which the father alone is syphilitic, and those in which the mother also, or she alone, is affected. While, in the first case, only twenty-four per cent. were born prematurely and seventy-six per cent. at term, the proportion of miscarriages reaches in category II (mother alone diseased) to forty five per cent., and in III (both parents diseased) to even fifty-one per cent. The reasons for there being a larger number of miscarriages in disease of the mother have already been considered. The The increase of the percentage in category III (both parents diseased) in comparison with II (only the mother syphilitic) may be regarded, certainly, apart from all accidental causes, as the consequence of the concentration of the syphilitic inheritance from both parents.

The 127 premature births occurred 31 times before the termination of the sixth solar month, 48 times in the seventh, and 48 times in the eighth solar month. Those born during the course of the ninth solar month were included with those at term.

The *true abortions* occurred, twice in the second month, four times in the third month, six times in the fourth month, seven times in the fifth month, and eleven times in the sixth month.

In the majority of cases they began the series of syphilitic births (14 times), in three cases two, and in one case even three actual abortions (previous to the sixth solar month) succeeded each other; and it was only seldom that such an abortion happened between premature births of viable syphilitic children. (*See* the Irregular Succession of Births.)

Cause of the Early Interruption of Pregnancy.—Different writers have sought in the most divergent directions for the deeper causes of premature births in syphilitic marriages. The greatest and most grievous error in this respect was that, for a long time, to the mercurial treatment of syphilitic pregnant women was attributed the cause of the miscarriage; this treatment, therefore, being strictly prohibited during the period. The

erroneousness of this opinion, in the great frequency of premature births in the healthy wives of syphilitic men, is readily shown; as also later experience taught that syphilitic pregnant women, treated mercurially, brought their pregnancy to a termination more often than those left to themselves.

Logically we can seek for the cause of the disturbance in but two directions: first, in the inherited disease of the embryo; and second, in the disease of the mother.

Even upon the most superficial consideration, it is obvious that the first cause, namely, *the transmission of the virus to the fœtus, must be the most important and by far the most frequent cause of the inception of miscarriage.* As speaking in favor of this, upon the one hand, exists the fact that the premature birth results often enough also as a consequence of disease in the father alone, whereby the second factor, the disease of the mother, is entirely thrown aside; but also, on the other hand, the so-frequently observed gradual advance in the time of the premature birth toward the normal termination of pregnancy in several successive births; a condition which can only find its explanation by a gradual decrease in the intensity of the fœtal disease.

But as we more deeply investigate into the connection between the fœtal disease and the occurrence of miscarriage, we have at once difficulties not slight in character, and, on the whole, we are more dependent upon presumptions and conclusions than upon palpable facts. Several observers have explained this readily for themselves, and have attributed certain definite diseases of single organs in the fœtus as the cause of its death, and, as a result, its premature birth. Depaul (*l. c.*) held the exclusive, or at least the most frequent, cause of the death of the embryo to be syphilitic infiltration of the lungs; Dubois (1851), abscess of the thymus; Gubler (1852), syphilitic hepatitis; Simpson (1851) even, fœtal peritonitis; and Oedmanson (1869), the atheromatous changes of the umbilical vessels. But this subject is not one so simple. The affections of these organs are, either singly or even collectively, comparatively rare in proportion to the great number of syphilitic miscarriages, and they may, indeed, in each single case in which they are found be the occasion, partly or wholly, of the premature death of the fœtus; but the larger number of syphilitic premature births are not brought about through such palpable and striking lesions.

The very remarkable occurrence which we have already mentioned many times may, in these obscure cases, put us upon the right track, namely, the gradual advance of the time of the miscarriage toward the normal end of pregnancy in several following consecutively. As, in living children born with syphilis, we see an analogous occurrence in the gradual

advance step, by step, of the manifest outbreak of syphilitic symptoms from the day of birth up to the third month, so would we at once suppose the gradual advance in the time of the premature birth to be intimately associated with the intra-uterine outbreak of hereditary syphilis, and the increasing scale of the different degrees of syphilitic poisoning, which are expressed by the outbreak of the first exanthema in the twelfth, tenth, sixth, third, and first week of extra-uterine life, to exist, also, during intra-uterine life; and here, also, the relatively modified poisoning causes, as a consequence, the outbreak of the fœtal disease in the ninth and eighth months, the more intense poisoning already in the seventh, sixth, and fifth months.

If we now consider what slight causes suffice, in certain cases, to bring about the premature birth and death of the fœtus; that, under certain conditions, the mere transmission of a febrile attack in the mother to the fœtus, whether it be through circulatory disturbances, through the alteration of temperature in the placenta, or through the morbid blood-in-terchange, can produce this effect; and that even such a slight febrile attack in the mother may be very injurious to the fœtus—it is certainly not surprising that a severer disease, attacking the embryo itself, can bring about the same result. When, in the symptomatology of hereditary syphilis, we now learn that in hereditary as likewise in acquired syphilis the outbreak of the general exanthema is preceded by a prodromic rise in temperature, that this prodromic fever appears almost unexceptionally with a temperature between 38.0 and 39.0 (Reaumur); when, in connection with the increase of temperature at the time of the extra-uterine eruption, also other prodromic symptoms are observed—striking pallor, enlargement of the spleen, great restlessness, continual screaming, often for several days, even weeks, before the visible symptoms—at all events, appearances which convince us of a severe affection of the general system, so should we find nothing remarkable in the fact that this severe general illness of the fœtus has at least the same effect as does sometimes a modified fever of the mother: namely, that it either causes the death of the fœtus, and thereby indirectly its expulsion, or that the disease of the fœtus induces contractions of the uterus and a premature labor, so that, indeed, a living child is born, although doubly endangered by its premature birth and its own disease.

As well in the first case, where the prodromic fever or the prodromic general illness causes the death of the fœtus in the uterus, as in the second, when it produces premature birth, and the nearly lifeless child succumbs before the outbreak of perceptible symptoms, it may happen, and, indeed, exceedingly often, that in the fœtus itself, even upon the most careful examination, no undoubted symptoms of the inherited dys-

crasia can be discovered. Further, the disease of the epiphyseal connections of the long bones, certainly very frequent, and which, according to Wegner (1870), is almost invariably present, according to Waldeyer and Kobner (*l c.*), and Frankel (*l. c.*), is unexceptionally found in syphilitic embryos, may be entirely absent, as I, in several cases of undoubted syphilitic heredity, through the most careful macroscopic and microscopic examinations have convinced myself of, and as I shall refer to at length in the chapter upon Bone Syphilis; this as well in still-born premature births as in non-viable syphilitic embryos. This holds good also, naturally, relative to the specific changes in the viscera.

But in many cases a complete outbreak of the disease occurs *intra uterum*, and may then likewise operate in two different ways: it either destroys the fœtus within the uterus through its severity, and it is then born dead, but with undoubted syphilitic lesions, pemphigus, diffuse syphilitic infiltration of the entire skin, etc., showing also frequently, upon dissection, syphilitic lesions of the intestines and far-advanced disease of the epiphyses; or, the child is born living, with the same externally perceptible and anatomically provable alterations. Of these two latter categories I have had opportunity to observe and carefully to examine numerous cases. But, taken collectively, the cases evidencing a negative result upon *post-mortem* examination are the most frequent, because usually the premature birth and death of the fœtus take place before the outbreak of the visible and palpable symptoms.

In connection with the inherited specific poisoning of the embryo, *the syphilis of the mother as a cause of premature birth* plays certainly but a subordinate *role*. Yet, upon grounds *a priori* as well as actual, it should not be entirely excluded. The deeply-seated general disease, and especially the prodromic affection of the syphilitic mother, accompanied frequently by fever, as well in the first eruption as also in the first relapse, may be certainly likewise as good a cause of the *partus præmaturus* as the eruptive fever of any other acute disease. But apart from this, it is remarkable that the early abortions (before the sixth, month), beginning occasionally the series of syphilitic births, are to be observed disproportionately oftener in disease of the mother than in the other cases. In the thirty-three cases in which the mother was syphilitic the initial abortion came under observation eight time (consequently in twenty-four per cent.), in the remaining eighty-six cases six times (consequently in seven per cent. only); and it is readily to be supposed that, in several of the first cases, the very recent syphilis of the mother—and of only such do we speak here—may have accelerated the premature birth of the first child, whether syphilitic or healthy at the time of conception.

Finally, among the causes of premature labor in connection with the inherited poisoning of the fœtus and the disease of the mother, there is still a third possibility to be considered: *the disease of the placenta*. But, fundamentally, the placenta is one-half a part of the mother and the other half a part of the fœtus, and we must therefore strictly separate the disease of the *pars fœtalis* from that of the *pars materna*. Such a separation has, in fact, been made. In all cases of syphilitic miscarriages Frankel (*l. c.*) found the *placenta fœtalis* diseased in a peculiarly diffuse manner, and agitated the question whether this affection of the placenta was the cause of the premature birth, or whether the fœtus death owing to internal causes was a primary, and the premature birth a secondary result.

Without desiring to entirely exclude the influence of disease of the *placenta fœtalis*—which, indeed, as a part of a severely diseased ovum, can be certainly drawn readily into sympathy with it—yet I would not inconsiderately accept this cause of the premature birth and death of the fœtus in the broad and general way assigned by Frankel. Upon the one hand, it is noteworthy that in several of his cases, in which the affection of the *placenta fœtalis* is repsented as well developed, with degeneration of the meshes and atrophy of the vessels of the villi, nevertheless neither premature birth nor fœtal death *in utero* occurred, but the pregnancy reached its normal termination; and in one case (I) death resulted first during labor, in another (XV) the mature child, affected with pemphigus, lived for five days. Upon the other hand, in many very carefully examined placentas of unmistakably syphilitic embryos, I have either not found the degeneration spoken of at all, or only in such limited amount that I could not convince myself, at least in three cases, of the significance attributed to it by its discoverer. Yet, in principle, it must be granted that relatively slight alterations in the structure of the placenta may also occasion a collateral fluxion to the otherwise healthy parts, blood extravasations, detachment of the placenta, and consequently indirectly abortion (Frankel).

The disease of the *maternal portion* of the placenta (*endometritis placentaris gummosa*) is naturally observed only in syphilitic mothers, and, upon the whole, very rarely. It has been described thus far in seven cases by Virchow, Kleinwachter (1872), Slawjansky (1871), and Frankel (*l. c.*). That such a disease can be a cause of premature birth is beyond a doubt; nevertheless, I believe that, in the by far larger number of all cases, it must be left quite out of consideration. The disease of the *placenta materna*, as of an internal organ, and especially in a gummy form, corresponds, at all events, with a later stage of maternal syphilis. But just here, in this late stage of maternal syphilis, a premature birth is

of most exceptional occurrence, while in the first years it follows almost unexceptionally.

Accordingly, therefore, the essential cause of fœtal death and miscarriage in the majority of cases of syphilitic premature births is to be found in the disease of the embryo itself.

(*To be continued.*)

SELECTION.

ABORTIVE TREATMENT OF BUBOES AND LYMPHADENITIS GENERALLY, BY INJECTIONS OF CARBOLIC ACID.

By Morse K. Taylor, M. D.,

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By the term "abortive treatment" I mean the immediate and complete arrest of inflammatory processes set up in the lymphatic glands from whatever cause, the prompt and permanent relief from pain, and the prevention of the formation of pus, and consequent abscesses.

The pathology and treatment of these glandular inflammations has of late received much attention in various directions. In the late International Medical Congress the subject was discussed at considerable length by Sir Wm. Gull and others; while MM. Bouchut and Le Pileur, of France, have recently contributed valuable articles to the literature of this branch of surgery. In none of these discussions, however, is the immediate and perfect arrest of the inflammation set up in these glands once referred to. In the English discussions, the views expressed were to the effect that these glands are not prone to take on inflammatory action, except as the result of the absorption of septic matters from neighboring morbid conditions, and that the proper treatment is to open the glands early; and, in case the deposits are of a caseous character, to enucleate or extirpate them. Bouchut recommends measures favoring the early breaking down of the structures, and to this end he has injected vegetable peptones obtained from the *Carica Papaya*, so as to digest the effused products, thereby producing an early abscess. This treatment is effective, it would seem, but very painful. Le Pileur advocates the early aspiration of the abscess, and in case it is of venereal origin, the injection

of nitrate of silver; while in the non-specific forms, he recommends the injection of solutions of boracic acid, or chloride of zinc. He states that the average duration of this treatment in nineteen cases was twenty-four days, which he deems successful and an improvement. Some have advocated the use of refrigeration, others pressure, and again others, and perhaps a majority, counter-irritation by iodine and blistering. None of these, however, afford any certainty in respect to arresting the morbid action, allaying the pain, or preventing the formation of pus, and the destruction of surrounding parts.

For nearly seven years I have pursued a different course in the treatment of this class of affections, and limited my practice to simply injecting the glands with solutions of carbolic acid. In this time I have treated nearly 150 cases of various forms of lymphadenitis, arising from specific and non-specific causes; and, where I have seen them before the formation of pus was well established, I have not failed to arrest the process immediately, and allay the pain in a few minutes. To indicate more fully the success attending this mode of treatment, notes of a few of my cases are herewith submitted. They are condensed as much as possible to save time and space.

CASE I.—While I was stationed at Austin, Texas, Mr. K., an English gentleman, aged about 30, and of excellent physique, called on me May 2, 1875, on account of a painful bubo in the right groin. He was desirous of going to Mexico, and was much distressed at the prospect of being delayed by the impending abscess; besides, having been exceedingly annoyed for two or three nights with the pain, and this, to the extent of allowing him no rest. The swelling and soreness were such that he could not stand erect or walk without great suffering. He gave, as an explanation of the cause, that he had been riding several days very hard on horseback looking up lands, and that about a week before he was out in a rain-storm nearly all day, at the close of which he reached that city. During the day he had felt some slight pain in that region, but paid no attention to it until the next morning, when he noticed a kernel there, which was quite tender to the touch, and annoyed him when he walked; and that, from that time to the present, it had been steadily enlarging and growing more painful. He stated further that, being a stranger, he had been advised to employ a certain physician, which, subsequently, he found to his disgust, to be a homœopathist. An examination revealed no venereal disorder, and he denied ever having had anything of that character. He was very anxious to proceed on his business, but more so to be releived of the pain that he might get some sleep.

The tumour was about two and one-half inches in length, of an ovoid shape, rather superficial, and situated on the inner aspect of the thigh just outside the femoral vessels, and perhaps two inches below Poupart's ligament. It was in the same region in which we so frequently find similar forms of lymphadenitis in cavalrymen after exposure and hard riding.

It was very painful to the touch, the skin was of a rose tint over a large part of the tumor, and from the general appearance it was on the verge of suppuration. I was inclined to poultice it, but he objected to that, and wanted somethiug more prompt for the relief of the pain. Morphine hypodermically suggested itself, but recalling the remarks of Surgeon J. H. Bill, of the army, on the local anæsthetic action of carbolic acid, and the furthur fact, that, in those cases where I had aspirated buboes, and thoroughly washed them out with carbolic solutions, the pain and soreness had been promptly relieved, I determined to give it a trial in this instance. Accordingly I prepared a solution of four grains to the ounce of distilled water, and after chilling the surface with ether spray, so as to diminish the sensitiveness, I seized the tumor firmly, and injected into the centre of the gland twenty minims of the solution. Feeling somewhat uncertain as to the result, I concluded to remain at his bedside and watch events. The operation gave very little pain. In about fifteen minutes he changed his position, when he remarked with some surprise, "I'm blarsted if I don't think that thing feels better." "It don't hurt me at all now to move my leg."

From this time there was no more pain or soreness worth mentioning. Not expecting to arrest the formation of an abscess, I called the next day under the impression that he would be again complaining, but to my gratification he stated that it had not troubled him in the least, and that he "could walk without minding it." I injected it again, however, and repeated the operation the second day thereafter, fearing that the inflammatory action might be renewed. But there was none whatever, and from the day following the first injection, he went about his usual business. The only additional treatment he received was a saline laxative. In ten or twelve days the tumor was not discoverable.

Case II.—Private J. A., Company D, Tenth infantry, was admitted to the Post Hospital, at Austin, July 12, 1875, with chancroid and a large bubo in each groin, nearly three inches in length, very painful, the skin flushed over both, and so tender as to make him unwilling to submit to the necessary manipulation to determine whether or not the glands had broken down, and abscesses had formed. He was an old soldier, and his constitution was much impaired by his excesses in drinking and

venereal indulgences. He was a hard subject at the best. I chilled the surface with the spray, and injected twenty minims of an eight-grain solution of the acid into each. On the introduction of the needle, I found pus was present, and I then aspirated the tumors and injected them the second time. The relief was immediate. The next day I aspirated them again, but obtained only a small quantity of thin pus, when I injected them as before. From this time on the buboes gave him no trouble, but for the chancroid he would have been returned to duty at the end of the week. He remained in hospital three weeks, at which time there was no trace of the buboes nor evidence of the abscesses.

CASE III.—Musician C. M., Co. D, Tenth infantry, reported at the Post Hospital, July 29, 1875, with a bubo following chancroid of ten days' standing. Injected the bubo on the same day, and returned him to duty August 11th. He was retained in the hospital to enable me to watch the effect of the treatment on the bubo as well as for treatment of the chancroid. But one injection was required to allay the pain and inflammation of the gland. No suppuration occurred, and the swelling was scarcely noticeable when returned to his company.

CASE IV.—Private Wm. H., general prisoner, reported August 6, 1875, with primary syphilis, and pubo in left groin two inches in length and painful. Injected 20 minims of the carbolic acid (8 gr.–dr.) solution. Returned to duty on the third day thereafter; the chancre was treated in quarters, as the prisoner could not be safely guarded in hospital.

CASE V.—Private A. P., Co. D, Tenth infantry, reported April 19, 1876, to Post Hospital, San Antonia, Texas, to which station the command had been changed. Bubo following gonorrhœa. Injected the gland and returned him to duty the next day. The gonorrhœal attack was mild, and of which he did not complain. The bubo was the only annoyance.

CASE VI.—Private L. M., Co. D, Tenth infantry, admitted Dec. 23, 1875, with acute catarrh. While convalescing, on Jan. 5, 1876, a syphilitic ulcer, of doublful character, appeared under the foreskin, and on the 7th, a rapidly swelling and highly inflamed bubo was observed in the right groin. Injected 15 minims of a 16-grain solution of the acid. He complained of the smarting from the caustic action of the solution, but it abated in a short time, and with that there was no further trouble with this gland. On the second day thereafter, another gland became inflamed, and was injected with 20 minims of an 8-grain solution, followed by immediate relief. On the 9th a third gland became involved, and was likewise injected on the second day thereafter. This ended

the buboes, and he would have been returned to duty at once but for the chancre. As it was, however, he remained on the sick report until Feb. 2d, when there was only a slight trace of the glandular enlargements.

CASE VII.—Private J. McG., Co. D, Tenth infantry, admitted March 5, 1876, with chancroid and a bubo well advanced and very painful. It was evident that pus was present, and accordingly I aspirated the tumor and withdrew about a drachm of thick pus, when I injected 20 minims of an 8-grain solution of the acid. The relief was immediate and permanent. But for the chancroid, he would have been returned to duty on the third day; he was retained in hospital until the 21st of the month, when he was discharged entirely well.

CASE VIII.—Sarah M., Colored, aged about 30, married, called on me Nov. 5, 1875, with a large swelling on the left side of the neck beneath the angle of the jaw; had ulcerated gums, and a severe cold. It was evident that the gland was involved as a consequence of the bad condition of the teeth. The swelling was very painful, and, according to the usual progress of such appearances, the inflammation would end in the formation of a large abscess. I injected 20 minims of carbolic solution with immediate relief and arrest of the inflammatory process. Gradual absorption took place, and no signs of the enlarged gland were visible after ten days.

CASE IX.—Private L. M., Co. D, Tenth infantry, was admitted to the Post Hospital at San Antonio, June 10, 1876, with a bubo about two inches in length. Injected the gland and returned him to duty the next day. No further trouble. He had had chancroid some weeks before, but the disease was entirely cured at this time.

CASE X.—Private A. P., Co. D, Tenth infantry, reported April 19, 1876, with a bubo following balanitis. Bubo highly inflamed and well advanced towards suppuration. Injected 20 minims the next day with complete arrest of the morbid action. This man did not go on the sick report only to the extent of designating him for "light duty" with his company for the two days.

CASE XI.—Private P. R., troop M, Eighth cavalry, reported July 21, 1876, with a large bubo following very hard riding and exposure to a severe storm. There was no venereal disease apparent, and he denied ever having had any. The gland was deep seated, highly inflamed, and very painful. He could scarcely walk or stand erect. An injection of 20 minims of the usual solution was administered, which afforded prompt relief. He was retained in hospital until the 30th, when he was re-

turned to his company entirely well. But for the fear that his riding might retard the cure he would have been sent to his company on the fourth day.

CASE XII.—Wm. S., private, Co. L, Eighth cavalry, admitted Aug. 4, 1876, with bubo following chancroid. Injected the gland and returned him to duty on August 8th.

CASE XIII.—Recruit L., for the Ninth cavalry, reported Sept. 27, 1876, with chancroid followed by a painful bubo. Injected the gland and cauterized the ulcer with nitric acid and returned him to duty Oct. 16th. Relief of the pain in the bubo immediate, with perfect arrest of the inflammatory process.

CASE XIV.—M. W., a recruit for the Tenth cavalry, was admitted Oct. 10, 1876, with chancre, and remained in hospital until Nov. 12th. On the tenth day after his admission, a bubo appeared in the left groin. I injected it within a day or two, when the gland was scarcely more than one inch in diameter, but whether I failed to reach the interior of the gland because of its being deep seated or other cause, I cannot say; notwithstanding the operation, the inflammation continued, and the swelling increased as usual. The pain was benefited somewhat, but not to the extent that I expected. I then waited until the fourth day thereafter, when the gland had more than doubled its diameter, and was of such a size that I could easily grasp it, and I injected it again with complete success.

CASE XV.—Thos. J., recruit for the Tenth cavalry, reported at the sick call with a bubo, following apparently a gleet, on Oct. 12, 1876. I injected the gland on the 16th, and returned him to duty three days thereafter. The gleet was treated with injections of chloral hydrate.

CASE XVI.—Wm. L., recruit for the Tenth cavalry, admitted to the Post Hospital Oct. 30, 1876, with bubo following gonorrhœa. Injected the gland, and returned him to duty Nov. 9th. Retained him solely on account of the gonorrhœa.

These recruits had contracted their diseases in the North, and the full development of which only became apparent while *en route* to their frontier stations. As a rule, owing to the fatigue of travel, and their inability to give themselves any personal attention while shut up in the cars five or six days, and want of sleep, the inflammatory action was disposed to run a very rapid course. The ulcers and gonorrhœal discharges were of the most virulent character, frequently excoriating surrounding parts.

In the foregoing cases I have not reported any where spontaneous openings had taken place, yet I might well do so, as the beneficial effects of the carbolic acid when freely employed in washing out the abscesses, and following this by compression, either by weights of three or four pounds or by tight bandaging, were none the less marked.

For the past two or three years I have taken no notes of this class of cases, for the reason that they could be but repetitions of what I already had. I have, however, distinct recollections of many cases that have come under my care meanwhile, and to which I can only refer in general terms. In my private practice I have had three cases of glandular swellings in the region of the neck—one following measels, and one following *Rotheln*, and the other from no ascertainable cause; in all of which the glands were painful, and the condition such as experience shows generally end in suppuration. They occured in girls aged between eight and twelve years. In all of these the pain and inflammatory action ceased in a few minutes after the operation, with a gradual resolution of the enlarged structures, ending at the expiration of twelve or fifteen days in complete removal of all traces of the morbid conditions in so far as external appearances were concerned. From 1876 to 1878 large numbers of troops, in addition to the regular command, were at San Antonio for greater or lesser periods of time, the aggregate amounting not unfrequently to three or four hundred men, embracing artillery, infantry and cavalry. In that time scarcely a week passed without cases of adenitis in some of its various forms being under treatment; and in not a single instance did the operation fail to arrest the progress of the disease if performed before suppuration had been reached. Again, since I have been at this post, four cases have been admitted for treatment in hospital.

CASE XVII.—The first was admitted Sept. 22, 1881, with chancroid and a large bubo. The ulcer was treated with iodoform and the gland injected as usual. The gland was not very painful at first, but, with the reddening of the skin over it, which occured on the fourth day after admission, it became tender; the operation was then performed with prompt relief of the pain, and arrest of the morbid condition. Oct. 8th he was returned to duty entirely cured, with scarcely a trace of the bubo remaining.

CASE XVIII—The second case posesses more interest. Sergeant L., Regimental Band, Tenth infantry, was admitted to the Post Hospital Nov. 16, 1881. His history showed that while absent on the expedition to the Yorktown celebration, in attempting to lift a heavy piece of baggage, he felt a sharp pain in the left inguinal region, and upon examination by the medical officer it was found that he had ruptured himself.

The hernia was reduced without trouble, but tenderness remained in the seat of injury up to the time of admission. Meanwhile a truss had been procured, and several attempts made to adjust it, but without success, because of the soreness. An examination on admission revealed the existence of enlarged deep-seated lymphatic glands situated a little above, and outwardly of the hernial opening, but their size was not such as to induce much external prominence. The truss was abandoned, the man directed to remain in bed, saline laxatives prescribed, and the region painted with iodine. Notwithstanding this course the glands continued to enlarge, and their painful character became more pronounced. There was no venereal disease whatever present, and he claimed that he had never had any. On the sixth day after his admission the inflammation had extended so as to involve a congeries of glands, reaching from near the penis outward and upward in the direction of the anterior superior spinous process of the ilium for a distance of fully four and one-half inches. The whole group was more or less painful, but those lowest down most so. Three of the glands were separated from the others so as to be clearly defined by the intervening sulci. At this time I decided to inject three of the most active, and accordingly threw into each fifteen minims of the solution of carbolic acid of the usual strength, after refrigerating the skin, so as to admit of the proper manipulation. No pain was complained of. The next day I injected the fourth in the same manner. This ended the treatment of the buboes. The following day, that is, Nov. 24th, the pain and tenderness were gone throughout the whole tumor, and, but for the reported hernia, which I wished to examine more fully, he could have been safely returned to duty on the day following; as it was, he remained under observation until Dec. 6th, when he assumed his duties, and, up to the present, has had no further trouble.

It is well known that these glands often become inflamed and painful without, however, going on to suppuration; and that, at times, in the progress of the diseased action it is difficult to say in the earlier stages whether the termination will be in resolution or in the production of an abscess. Because of this, in the minds of some, doubts may arise as to the real value of these operative measures in arresting the morbid tendencies. Touching this part of the subject I present the following case:

CASE XIX.—In June, 1878, Private M., Co. E, Tenth infantry, reported at the morning sick-call with a chancroid of a few days' standing, and with a bubo in the left groin. Of the latter he complained chiefly; and, as to the first, he had been treating himself in the hope of avoiding exposure. As the bubo did not seem sufficiently advanced to

enable the injection to have the most certain results, I decided to wait until the next day before interfering with it, meanwhile directing the administration of a saline purgative, and the cauterization of the ulcer with nitric acid. At the morning hour he reported as directed. The gland had increased in size quite considerably, and the pain had interfered with his night's rest, as well as with his military duties. After the usual refrigeration I injected thirty minims of the standard solution of carbolic acid. In about fifteen minutes he came into my office and said the pain was all gone, and that he would like to go to his company; his request was granted. In a day or two he was sent out on escort duty and was absent ten days, during which time he had been compelled to ride on the outside of the stage-coach under arms, with no chance to give himself any personal attention. As a result the chancroid had assumed an aggravated aspect, and another gland situated just below the one injected was now highly inflamed, but had not reached the stage of breaking down into an abscess. The gland I had injected was painless, and reduced to about one-fourth the size when operated on. To satisfy myself that the virulence of the disease was such, that, if allowed to run the usual course, suppuration in the first instance would have been the result, I decided to treat this one in the usual way. I prescribed accordingly saline laxatives, and the internal administration of iodide of potassium, low diet, rest, and later poultices. The gland was deep-seated, and not until the fourth day did it appear to be in a condition favorable for discharging it. I then aspirated it, and drew off nearly a half ounce of thick pus when I refilled the cavity with thirty minims of a solution of twelve grains of carbolic acid to the ounce, and applied a firm compress. The second day I aspirated it again, washed it out thoroughly with the solution, and applied the compress as before. There was a little drainage through the opening made by the needle for three days, but no further operative measures were employed, and on the sixth day thereafter the chancroid was in a condition to admit of his resuming his company duties.

I have regarded this as in some degree a test case, and I think it is fair to presume that the first bubo would have behaved like the second, had its course not been interfered with; and I entertain no doubt, that had I treated the second as I did the first, the result would have been the same as with that.

Some care is required to insure certainty in reaching the central portion of the gland, and without this the effort may fail of its purpose. To that end, therefore, I have found it better to wait until the gland has attained to some size, and its stroma sufficiently distended to admit of

the free permeation of the injection to all parts of its structure. I have injected them when quite small in the earlier stages, but generally, when I have done so, a second operation has been required, the reason being in my judgment that the gland is too dense for the injected fluid to reach all parts; and the further cause, perhaps, that the inelasticity is such as to force out the fluid immediately, threby preventing its specific action.

It is also better to refrigerate the skin over the tumor, in order to diminish the sensibility and permit the gland to be firmly held so as to determine its size, and to ascertain the depth to which the needle must penetrate to reach its central parts, while an additional benefit is obtained in the relieving of the patient of any sense of apprehension of pain due to the operation. With some patients this is indispensable to success, for not infrequently, by the cringing of the lower abdominal muscles, and the raising of the leg at the same time, the bubo is placed beyond the firm support of the fingers, the needle thereby misdirected, and the fluid but partially thrown into the gland, or, perhaps, merely into the surrounding external tissues. Only failure could be reasonably expected in such cases.

As a rule, the depth to which the needle should be thrust can be determined by indicating approximately on it, two-thirds of the narrowest diameter of the tumor when firmly held between the thumb and fingers. Taking this measure as a guide, it will admit of the needle being introduced a little obliquely to the surface of the capsule, so as to make a valvular opening, thereby preventing reflux action; and this effect may be further assured by a momentary digital pressure following the withdrawal of the needle.

The average time my patients have had to forego their usual vocations, has not exceeded three or four days, but many will go on with their usual employments if assured they can safely do so; an assurance I have not hesitated to give, after ascertaining whether or not a second injection would be required.

The *rationale* of the treatment can be understood if we accept of the views of those who took part in the international medical discussions, which were to the effect, in general terms, that lymphadenitis, in all its forms, is the result of the absorption of septic matters from some neighboring parts, hence, by destroying these zymotic elements, we remove the offending cause and arrest the morbid processes consequent thereon. But I am not sure that this is all of it; on the other hand, I am satisfied that the local anæsthetic action of carbolic acid is not a less important factor in the treatment. Many other antiseptics, such as iodine, boracic acid, chloride of zinc, corrosive sublimate, etc., all of which are very prompt in their antiseptic action, have been used, yet they have generally failed to check the inflammatory action, or to allay the pain; on the con-

trary the latter has been greatly augmented, becoming at times almost unendurable. Allaying pain is a necessary element in the treatment of any form of disease, and in so far as local effects are concerned, we have no agent equalling carbolic acid in this respect.

While not strictly coming under the heading of this article, yet being so nearly akin to it, I am disposed to refer to the necessity of an early aspiration of the buboes where matter has been formed. In this respect my own experience, as before stated, is fully in accord with M. Le Pileur's. In his recommendations, however, of injections of boracic acid and zinc chloride, in ordinary cases, while in those supposed to be due to venereal sepsis, nitrate of silver should be employed, I fail to recognize any advantages over carbolic acid, if we are to judge by results. Quite to the reverse, I aver that not a single case which I have treated in the series of years I have indicated hitherto, has lasted twenty-four days, the average of those reported by him. Bearing on this part of the subject, and at the risk of being criticized for attempting to adduce general principles in practice from a single case, but which is farthest from my purpose, I am constrained to refer briefly to the following case as indicating in some degree the relative merits of the different agents.

CASE XX.—Private A., Co. H, Tenth infantry, was admitted to the Post Hospital at Fort Wayne, May 26, 1881, under the administration of my predecessor, with chancroid and bubo. The latter was treated by applications of ice, with the effect of arresting the inflammation, so that he was returned to duty June 17th. About the middle of September, 1881, he was detailed as cook in hospital, when, soon after, the gland began to swell again. In the belief that there were some morbid matters in his system which had been "prevented from coming out," as he expressed himself, by the abortive treatment with the ice, he said nothing of his condition until spontaneous openings appeared, when he could no longer conceal it. At this time, September 25th, he came under my care. The tumor was now four and a half inches in length, by nearly three in breadth, with openings appearing in three places; one in the middle and one at each extremity, the latter being three inches apart. It looked as though the whole intermediate space would slough very soon. An extensive cavity, two and a half inches deep, and reaching from one extremity to the other, was found on examination to have been formed, with a copious flow of pus issuing therefrom. I directed the steward to syringe it out thoroughly with a solution of 8 grains of carbolic acid to the ounce, and to cover the gland with a thick compress of carbolized oakum. The next day there was little or no change for the better, and the same was true of the appearance on the second and third days. Indeed, it was disposed to

be very indolent. On the third day I directed it to be washed out in every part, by a 16-grain solution, and a compress of 4 pounds weight, made of a bag of shot, to be applied, with a pledget of the oakum a half inch in thickness intervening. The whole aspect was changed in twenty-four hours, and from this time a speedy recovery followed, and he was returned to duty on Oct. 10th, or on the fifteenth day. It was certainly an unpromising case, and one which, if treated with poultices, would have lingered for many weeks, judging by experience. I have frequently, in the thirty years past, employed iodine and nitrate of silver under similar circumstances, but I have never obtained so satisfactory results in the same length of time in a similar case from those agents, as in this instance, with carbolic acid, and it is only one of many which I could cite.

While there can be no question of the importance of early aspiration after pus is formed, considered in the light afforded by antiseptic experiences, it may be remarked that, in the smaller tumors, and in the larger before the stroma is broken down, the operation need not be carried on to the complete exhaustion of all the matter. A removal of a portion, and refilling the gland with the carbolized fluid, will generally suffice. Under such circumstances, there will often be a little drainage through the opening, perhaps for a day or two, of a thin watery pus, after which the activity of the morbid process will cease, and recovery soon follow. If one, therefore, has a pretty large hypodermic needle, both the operations of aspiration and injection may be done without removing the instrument. When the structure of the gland, however, and with that not unfrequently a considerable amount of surrounding tissue, has been destroyed with the formation of a large cavity, only the most thorough washing out with a four or five per cent. solution will avail, and this to be followed by very firm and exact compression. Without some such course the value of aspiration is often greatly impaired, and several subsequent operations may be required. It is well known that pus cavities are the more likely likely to heal at once, if, after the first discharge, the pyoid tendencies are destroyed, and the walls closely approximated.

These may seem small matters in detail, and scarcely worth mentioning, yet they are often of the highest importance in securing the most favorable results, alike as to the length of time in recovery, the prevention of burrowing sinuses, and subsequent disfiguring adhesions; and further, if we do not attend to them, we may frequently meet with vexatious disappointments when we had good reason to hope for success. The injection of the abscess is not alone sufficient. It must be followed by the most scrupulous attention in compression, and the appliances resorted to for that purpose should be fitted with the utmost exactness and firmness, and

yet be comfortable to the patient. It is not always easy to do this, and sometimes the ingenuity of the medical attendant is severely taxed to meet the requirements.

Pursuing this course as to details, I can truthfully say that I have not had to use a lancet to open an abscess in the lymphatic glands, arising from whatever cause, or prescribe a poultice to be applied to one, since I adopted this mode of procedure; nor have I had in the time any lingering abscesses, disfiguring adhesions, or unsightly scars to regret.

In so far as the abortive treatment is concerned, I may say further in support of my own experience, that at the meeting of the Texas State Medical Association, held at San Antonio in 1878, I invited the attention of the members of that body to this subject in some desultory remarks, and that subsequently several of the gentlemen informed me that the treatment had been equally favorably in their experience. How it will answer in those cases, however, where the deposits are of a caseous character, I am not prepared to say, for I have had none of that form to treat in the time indicated. In respect to such, then, I can only say experience must be our guide as to the value of carbolic acid in arresting the morbid action in its earlier stages; as to the latter, there can be no reasonable doubt.

A few words in regard to compression. As generally understood, when compresses are advised, it means the employment of bandages as recommended in standard works on surgery. A difficulty in their use, however, arises in the adjustment in such a manner as to secure uniformity in pressure from one dressing to another, and their retention in place; and without this uniformity, any mode of antiseptic treatment of deep-seated abscesses and sinuses may be a failure. For the inguinal and abdominal regions I have obtained far better effects from the employment of a compress made of a bag of shot weighing three or four pounds, and, in its absence, a bag of dry sand, with an intervening layer of carbolized oakum, tow, or absorbent cotton, to take up the discharge.

For the axillary and cervical regions the Irish potato, or other similar substance, trimmed properly to fit the location—which can be easily done —then enveloped in a strip of thin muslin, the ends of which have been divided into three or four parts, and when adjusted these ends carried in the direction in which the pressure is required, and passed through loops of rubber bands of from one-fourth to a half inch in width, such as are used in stationery, and secured in position by tapes, answer the purposes best. The elasticity of the bands keeps up a nearly uniform pressure, which is not materially varied by changes of position or movements of the body, while the readiness with which the direction of the pressure can

be altered, as circumstances require, is of great advantage. This mode of dressing is light, elastic, firm in position, easily applied directly to the abscess without interfering seriously with other parts, is constant and effective in any locality, variable in any direction without removal, and comfortable to the patient. In these respects no ordinary mode of bandaging is at all comparable to the elastic. The ease with which the potato, or other esculent root, can be fitted to any surface or cavity, and that only, and the thickness varied according to the degree of pressure required, gives it an advantage over any other substance likely to be at hand. In order to keep the compress from slipping, the muslin envelope should be given a half-turn close to each end of it; this also prevents the strips from becoming loosened by the tearing of the envelope. The object of the antiseptic injections is to correct and arrest the pyogenia; and after this the efforts should be directed to the coaptation of the walls of the cavity, and to secure immediate union. To this end I believe that any one who will give this mode of applying compresses a fair trial will be satisfied thereafter with none other.

The strength of the solution employed has ranged from 4 grains to 16 grains to the ounce of water. The weaker solutions are best adapted to cases in childhood, but are not prompt enough in allaying pain in the more highly inflamed cases in adults. A solution of 8 or 10 grains to the ounce, and the injection of from 10 to 40 minims of this strength, will ordinarily meet the requirements for abortive results. The stronger solutions are sometimes, for the moment, unnecessarily painful from their caustic action. An 8-grain solution is the most convenient, of which 20 or 30 minims may be injection.

In mammitis, this strength has been used in a single case with prompt arrest of the inflammation and cure of the disease. As I have had but the one case, however, to treat since adopting the antiseptic method, I have not thought it desirable to include it in detail in this report, yet I have no doubt of its efficiency in all cases where the morbid action is circumscribed, and does not involve the whole mammary gland, and I shall not hesitate to employ carbolized solutions when occasions indicate their use, with the same confidence as to results, that I now do in other forms of adenitis.—*Amer. Jour. Med. Sciences*, April, 1882.

EDITORIAL.

PROFESSOR SAMUEL D. GROSS.

The resignation of a teacher so distinguished, and his retirement from the active duties of instructing the young aspirants for medical degrees, is worthy of more than passing notice. For many years Professor Gross has been cheerfully and universally accorded a preeminent position among the surgeons of America. His reputation has become international, and he is looked upon, wherever our science is recognized and appreciated, as one of the greatest living surgeons, one whose name will remain alive after the body shall have resolved itself into clay; a name that will be treasured and revered for ages to come, as we of to-day are wont to cherish the memories of Æsculapius, Hippocrates, Galen, Vesalius, Hunter, or Mc Dowell.

Truly Professor Gross is a great man. Great in everything that tends to make a man a man. Not only does he excell in his own particular study and pursuit, but also does he stand preeminent in all the requisites of a true and *gentle* man.

Born near Easton, Pa., on the 8th of July, 1805, he received a classical education at the Wilkesbarre Academy and the high school at Lawrenceville, N. J. He commenced the study of medicine with Dr. Joseph K. Swift, of Easton, and was subsequently, for two years, a private student under Prof. George McClellan. He graduated from the Jefferson Medical College in 1828, and began practice in Philadelphia, employing his leisure hours in close study, and in the translation of several standard French and German medical works, which were published. In 1830 he issued his first original work, "Diseases and Injuries of the Bones and Joints," in which particular mention is made of the use of adhesive plaster as a means of extension in the treatment of fractures, now so generally employed by surgeons of this and other countries. During the same year he returned to Easton. In 1833 he became Dem-

onstrator of Anatomy in the Medical College of Ohio, at Cincinnati, and two years later, Professor of Pathological Anatomy in the Medical Department of the Cincinnati College. Here he delivered the first systematic course of lectures on morbid anatomy ever given in the United States, and while thus occupied composed his "Elements of Pathological Anatomy," the first methodical treatise on the subject ever published on this side of the Atlantic or in the English language. After four years he accepted the Chair of Surgery in the University of Louisville. For ten years he labored in this lecture room, and then, in 1850, resigned, to accept a similar professorship in the University of New York, just vacant by the retirement of the venerable Dr. Mott. At the end of the first session he withdrew, and at the earnest solicitation of his former colleagues, returned to his Louisville chair. In 1856 he was elected Professor of Surgery in the Jefferson Medical College, of Philadelphia, which chair he has continuously occupied until the present time.

Dr. Gross is a very voluminous author; in addition to the works already named, he has, among others, written his "System of Surgery," upon which his posthuminous fame will most probably mainly depend: it appeared in 1859, has passed through five editions, the last, issued in 1872, being thoroughly revised and brought up to the existing state of the science. It was translated into Dutch, and published at Nieuewdiep, in 1863, and is the most elaborate and exhaustive work on Surgery ever written by one man. He edited a large work on "American Medical Biography," was one of the founders and chief editors of the *North American Medico-Chirurgical Review*, and is the author of numerous addresses on medicine, surgery and biography, of a "History of American Medical Literature," and of a "History of the Progress of American Surgery during the last Century." He is a member of the American Philosophical Society, of numerous medical societies in the United States, of the Imperial Medical Society of Vienna; of the Medical Society of Christiana, in Norway; Royal Medical and Chirurgical of London; Medico-Chirurgical of Edinburgh; Medical Society of London, and British Medical Association, to which, on two occasions, he was an accredited delegate. He was one of the founders and early presidents

of the Kentucky State Medical Society. While in Louisville, he published an elaborate and exhaustive "Report on Kentucky Surgery," in which he first established the fact that the late Dr. Ephraim McDowell, of Danville, in that State, was justly entitled to the honor of being the father of ovariotomy, until then erroneously ascribed to other surgeons. Shortly after settling in Philadelphia, he founded, in conjunction with Dr. Da Costa, the Philadelphia Pathological Society, of which he was the first President. In 1867 he was elected President of the American Medical Association and in April, 1870, presided at the Teachers' Medical Convention, held in Washington, to consider the subject of medical education. In June, 1870, he was chosen President of the Pennsylvania State Medical Society. In 1872, the University of Oxford, at its one thousandth commencement, conferred on him the honorary degree of D. C. L.; that of LL. D. he had previously received from Jefferson College. He was unanimously elected President of the International Medical Congress which met in Philadelphia, in September, 1876.

Dr. Gross has always been a warm and decided advocate of professional progress and of a higher standard of medical education. Systematic and economical of time, he has, while punctually fulfilling all engagements as professor and practitioner, been enabled to maintain his early habits of earnest study, to keep thoroughly informed in medical and general literature, and to become a voluminous author. Large portions of his works have been composed while riding about the city in his daily professional routine. Such is a brief sketch of the life of this great and good man. It should be familiar to every student and young practitioner of medicine, since it would be impossible to select a better model, or to follow in the footsteps of a more perfect medical life, than that of the venerable professor who has just, to the regret of the universal profession, retired from public life.—*Med. and Surg. Reporter.*

REPORT ON DISEASES OF WOMEN AND OBSTETRICS.

By Thomas H. Hawkins, M.D.

Antiseptic Midwifery.—This subject is the theme concerning which there has been much discussion, especially in connection with septicæmia in midwifery. Robert Barnes, M. D., F. R. C. P., (*American Journal of Obstetrics*, Jan., 1882,) says that so far as the antiseptic appliances are concerned, they may be regarded as subsidiary means, nevertheless, essential to the proper carrying of the great principle which underlies all good obstetric practice, viz.: to screen the lying-in woman from poisons and noxious influences which surround her on every side.

Antiseptic midwifery, then, after all is only a part of a great therapeutic scheme, and the essential thing, as Dr. Barnes very wisely and truly states, is to take such a large view of the physiological and pathological processes as will give the right indications to call upon each and all of the therapeutical agents at our command. To form a correct idea of treatment, we must then seek to attain a full knowledge of the conditions which, separately or in combination, threaten to work or are working disorder in the puerpera. There can be no doubting that the foundation of puerperal disease is laid during gestation, and it is also true, as told in this article, that with the completion of labor, the conditions predisposing to disease gather strength, and that during the puerperal state fresh elements of danger accumulate. These three states bring their contingent to the development of every puerperal disease. The fundamental proposition which differentiates the disease of the gravida from the disease of the puerpera.

The diseases of the gravida are diseases of high nervous and high vascular tension; the diseases of the puerpera are diseases of low nervous and low vascular tension. In the gravida, the balance of osmosis is centrifugal; in the puerpera it is centripetal. The diseases of the gravida arise out of natural conditions exaggerated in intensity. Thus, the most striking examples of high tension in excess are seen in the albuminuria and eclampsia, and the hæmorrhages of pregnancy. An active process of building is going on, and everything is made subservient to this work. But the moment this work is complete, the reverse process of demolition of carrying away the refuse is begun. Absorption and excretion then are the ruling energies. Of course, an active absorption, commensurate

with and subservient to the process of construction, goes on during gestation. But this is a very different thing from the absorption of the refuse-stuff, which, having served its purpose, has to be cast out from the body. This refuse-stuff, if not duly excreted, may be as poisonous as are the elements of urine if not duly excreted. Hence we see that, in pregnancy, thrombosis, phlegmasia dolens, septicæmia are extremely rare, whereas, during the puerperal state, they are common.

Before entering upon the discussion of "antiseptic midwifery," we ought to form a clear conception of what constitutes "septicæmia in midwifery." When a puerpera is assailed by any fever-producing cause, her condition is a complex one. We cannot condense the various factors concerned into a simple expression that shall approach a rigorous definition. In dealing with most, if not with all vital processes, any attempt at concise definition is certain to be frustrated. Essential factors will be neglected, and the more terse and striking the definition the more certain it is to deceive. Instead of defining septicæmia, I will endeavor to describe it—how the word "septicæia," as used in obstetric discussions, is itself a definition. If by it we understand simply that a special poison has been taken up into the blood of a puerpera, we have a most imperfect idea of the case. We frame a picture in our minds which is far from representing what is passing in the poisoned puerpera.

If, then, we continue to use the word septicæmia, and it is too convenient to reject, we must interpret it broardly, giving it some elasticity. In the first place, I would propose that the word should not assume that a distinct specific poison, or sepsis alone, is concerned, but that it should be used comprehensively as a general term, implying that the blood of the puerpera is empoisoned. Theoretically, or in imagination, we may conjure up a specific poison and call it "sepsin;" but can it be physically and clinically identified?

Koch* includes all cases of general traumatic infection in which no metastatic deposits occur under septicæmia, and those in the course of which such deposits occur under pyæmia. If it be established, and Koch goes far to establish it, that bacteria are hardly ever found in the blood in septicæmia, whilst they are commonly found in pyæmia, his distinction may rest on good scientific grounds. Investigations in this direction promise rich results in practice; but in the mean time the most useful line of speculation must be drawn from clinical observation. In many cases we may, to all appearances, have Koch's septicæmia running into his pyæmia. Are the two affections distinct *ab initio?* This deeply interesting question cannot, it seems, yet be answered. We may, how-

* New Lydenham Society's edition.

ever, when occasion requires, use the terms septicæmia and pyæmia in Koch's sense. But we want a general and comprehensive term. We cannot find one better suited than the old word "toxemia." It implies theory. It is simply the expression of the fact that some poison has been developed in or has been introduced into the blood. Having by observation of well-known symptoms verified this fact, we then proceed to analyze, to differentiate, if we can, and to fix the particular poison which is at work.

If we accept septicæmia in the same sense as toxemia, the term "antiseptic midwifery" assumes a correspondingly larger significance, and we shall be led to form a more useful, a more clinical conception of one of the most deeply interesting problems in obstetrics. Let us endeavor to trace the several factors which enter into the problem.

1. There is the blood of the gravida modified by the processes of construction and nutrition of the embryo and uterus. They are: excess of fibrin, diminished proportion of red globules, increased proportion of water, increase of white globules.

These characters are found at the time of labor, and the blood so constituted, differing as it does from the blood of woman in her ordinary state, is the blood in which are wrought the post-partum and puerperal processes. Nor is the peculiar state of the blood all. The altered blood is associated with universal changes going on in the body. Farnier reminds us that "Science records day by day new facts which lead us to conclude that in the pregnant woman there is not a single fibre or a single drop of liquid which does not undergo some modification."

If there has been much hæmorrhage during or after the labor, the blood has become more watery and more charged with fibrin. The excess of albuminoid or colloid materials increases osmosis.

2. There is the fall of nervous and vascular tension involving a change in the dynamic state of the circulation.

3. There is a period of comparative rest following labor, of preparation for the active processes of breaking up of the tissue used during pregnancy, non-superfluous, and of casting out the refuse-stuff. This period may be stated to be about forty-eight hours. We rarely see evidence of self-empoisonment before the third day. At the end of the second day the process of disintegration of the uterus and other organs has begun. An immense revolution is at hand. The proceeds of the disintegration of the uterus and other superfluous structures are rapidly taken up into the circulation, and ought to be as rapidly converted and execreted. Absorption revives. The lymphatic vessels and venules have come into active function. If the lymphatic system and liver, especially, fail to modify the waste-stuff brought to them so as to fit it to

enter the circulating blood, then this unprepared unmodified waste-stuff is noxious, poisonous. Hence one form of toxemia.

But even assuming that the waste-stuff enters the blood-mass properly prepared or digested, unless it be got rid of pari passo, there will be accumulating of waste-stuff in the system. This again is a form of toxemia. Hence there must be easily working excretory organs; the lungs, kidneys, skin must be sound. Now it is obvious that both the evils pointed out may co-exist, that is, the conversion of the waste-stuff and the excretion may both be defective. Hence already we see a complex toxemia, fully endognetic, derived from no external source.

Fresh dangers are at hand. It is a remarkable fact—not without practical interest beyond our immediate theme—that all the successive steps in the history of reproduction are marked by violent lesions of tissue, ruptures or laceration. The bursting of the Graafian follicle and ovary, the frequent rupture of the fourchette and of the hymen in coitus, the tearing of the cervix uteri during the passage of the child, and disruption of the placenta from the uterus, the laceration of the perineum, all obvious illustrations of this proposition. Another fact, less obvious but even more constant than some of the preceding, is the violent bruising to which the parturient mucous tract is exposed during labor. A process which may be likened to glacier action takes place. The mucous membrane in contact with the head glides down under the influence of friction, separating it to some extent from the sub-mucous tissue. In this movement the connecting vessels are torn. Hence the ecchymosis commonly seen in autopsies about the cervix uteri and vagina, if performed within a week of labor. Not only is there commonly found extravasated blood, but a quantity of serum in the connective tissue. In about two or three days the epithelial layer of the mucous membrane crushed, begins to be exfoliated. This is effected more or less completely at different parts; most completely at the cervix uteri.

Limiting the application of these facts to one theme, we see here the traumatism which plays so important a part in puerperal septicæmia. The lacerations of the cervix uteri and perineum have often been insisted upon, especially by the German school. The wound of the uterine surface left by the disruption of the placenta had been likened by Cruveilhier, Robert Ferguson, and others to an amputated stump. The basing of the mucous membrane has not hiththerto, as far as I know, been considered. I am disposed, however, to think it is often the most important factor in the poisoning process. It is the most active and constant septicode or poison-route.

Here, then, are several roads open to the reception of poisons from the mucous tract. If no poison collect on any part of this septicode

receptive tract, the wounds heal readily and the door is closed. It matters little that there existed an extensive traumatic surface. But if blood or lochial discharge remain in the uterus or vagina, and air find its way into contact, decomposition takes place. A foul fluid bathes the wounded mucous tract and at some point or other finds an entry into the system.

This is still a form of autogenetic toxemia, but it differs from that form which is the result sinply of the accumulation of badly prepared or excessive waste-stuff in the blood, by the addition of foul stuff from the uterine discharges. The case has increased in complexity.

There is first, the fundamental state of the blood derived from the gravid process; second, the blood further modified by the waste-stuff from disintegration of tissue; and third, there is the septic stuff taken up from the wounded mucous tract. Whenever the blood is poisoned, be it with septic stuff or other, the natural process of purification, of excretion of the waste-stuff is obstructed the balance between disintegration, absorption and excretion is lost.

The simple septicæmia then, as imaginal and discribed, cannot exist. The puerpera is still open to toxic invasion from other sourses. Poisons altogether foreign to her may be brought into contact with the traumatic tract and be absorbed. Thus the cadaveric poison from dissecting may be inoculated by the finger used in examination; other poisons, the result of diseased action, clinging to the obstetric finger may be inoculated in like manner. Sponges or linen tainted with similar poisons have been the carriers of poison to the genitals. In some of these instances it is probable that bacteria plays an important part.

Thus another complication is added. All the elements of blood-alteration already cited are at work and are intensified by the new poison from without. Then the puerpera is peculiarly susceptible to the ingestion of the zymotic poisons: typhoid, variola, scarlatina, rubeola erysipelas act with special virulence in the blood of the puerpera. It has been the fashion to say that scarlatina in a puerpera is scarlatina and nothing more. It is something more. The scarlatina poison finds in the puerperal blood, loaded with refuse-stuff which it cannot execrete; a medium specially favorable to the development of mischief. The subject may have had scarlatina before. She may have enjoyed the full degree of protection until she became pregnant. Under this protection, contact with the scarlatina poison may have been harmless. If inhaled or otherwise absorbed, it failed to ferment. It was quickly eliminated. But if this poison enter the puerperal blood, its elimination is arrested, the morbid train is fired. We have developed a form of toxemia compounded of the autogenetic forms previously described and of the scarlatina poison. This is very different from simple scarlatina. In these

cases the characteristic rash is often wanting. It may be doubted whether the zymotic poison goes through the successive stages of zymosis characteristic of the simple scarlatina. The poison works in a specially prepared field in a special manner. It throws out of order the puerperal process. It arrests or prevents the disintegration process, the due absorption by the lymphatics, the modifying action of the lymphatic glands and liver, the excretory function of the lungs, skin and kidneys. Thus we get a complex poison which cannot be called waste-stuff poison, septicæmia, pyæmia or scarlatina, but is a compound of all, and perhaps of some new innominate poison, the product of their inter-reactions.

Another factor must not be lost sight of: emotional disturbances play an important part. An emotion-storm may so affect the heart and nutrition that the blood curdles, clots suddenly. The influence of emotions upon secretion and excretion is well known in some conditions.

It is not so well known in the puerperal state. But that it may and does profoundly impress the circulation, nutrition and excretion is certain. Emotion is in many cases the most conspicuous genetic cause of puerperal fever. Where it is not the primary cause, it may often be a secondary exacerbating cause. We may summarize the forms of puerperal toxemia under three heads.

1. The self-empoisonment resulting from the loss of balance between absorption of waste-stuff and its excretion. This may be called endosepsis, since the poison arises within the system.

2. Self-empoisonment from absorption of the foul stuff of decomposition in the uterus. This may be called autosepsis, since the puerpera takes poison of her own making. This is what has been more especially called septicæmia.

3. Empoisonment from foreign sources. This may be called exosepsis.

There may be a simple endosepsis, but autosepsis also implies endosepsis; and exosepsis is a compound of all three.

Endosepsis is not, I believe, communicable or infectious. Autosepsis is the discharges from one puerpera, which are capable of poisoning herself, may poison another puerpera. Exosepsis is doubly infectious. It is infectious as autosepsis and as a zymotic.

Having taken account of the poisons which threaten the puerpera and of the gates by which they may effect an entry, we shall be better able to protect her. Two great objects have to be kept in view. First, to keep all extraneous poisons out. Second, if any affect an entry, to counteract their noxious influences.

A primary condition essential to the successful attainments of these two objects is to put the system itself in the best position for defense;

that is, to secure the sufficient working of all the organs concerned in nutrition and excretion. The carrying out of this programme fully is antiseptic midwifery in the broard sense. The adaptation of the Listerian or conventional antiseptic precautions is antiseptic midwifery in the partial and narrow sense.

Unfortunately the first condition of effective resistance to toxemia is not always attainable. We must take the puerperal subject as we find her; perhaps with damaged kidneys or liver, deficient in nerve power, in fibre, and with skin and lungs unequal to the new task thrown upon them. This is another way of expressing an aphorism which I have taken other opportunities of illustrating, namely, that pregnancy is the great test of the soundness of the subject; under this test many women break down. They break down at various stages of the process. Some get no further than abortions; some hold out a little longer; some fail in the effort of parturition, others break down under the strain of child-bed. About the third day, it is a familiar fact that some slight rise of temperature and a quickened pulse attest a degree of febrility.

This has hitherto been considered as "milk fever;" it being assumed that the starting of the new function in the breast causes febrile disturbance. Sometimes the teren "ephemeral" fever has been used. Now, it deserves to be considered whether this febrility occuring on the third day be really due to the milk secretion; that is, is it physiological? Is it a constant phenomenon? It is not constant. If the breasts are sound and perform their function well, there is no fever. If there is fever, it obstructs the due secretion of milk. If the breast is not in a fit condition to secrete, then, indeed, fever is excited.

Dr. Fancourt Bownes has made observations which seem to determine this point. So long as antiseptic care was not observed at the British Lying-in Hospital, high temperatures ruled; when antiseptic care was strictly observed, high temperatures were rarely seen.

The truth is, that about the third is the epoch for the establishment of the absorptive process. The two days following labor are a period of rest. During this time the disintegration of the uterus and other superfluous structures is only beginning. The supply of waste-stuff for absorption is scanty. This can hardly be a source of fever. And if there be any blood or other matter in the uterus, it will hardly decompose under two days or more, so as to yield septic stuff for absorption. But on the third day, waste-stuff is pouring into the blood; decomposition may have begun in the uterus, and active absorption finds material to work upon. Thus it is that febrility occurs on the third day. The mammary glands labor under the disturbance induced, their healthy action is impeded,

and being under easy observation, their struggle against the fever is interpreted as the cause of the fever.

The obvious lesson to be drawn from this history is to begin antiseptic treatment early. Indeed, it begins with the conduct of the labor. The first great point to be aimed at is to secure firm contraction of the uterus. It is superfluous to dwell on a point so universally recognized. But it is not superfluous to dwell upon certain means that lend powerful help in securing it. The immediate object sought in securing contraction is to obviate hæmorrhage. To obviate hæmorrhage is to oppose septicemia. Passing by the usual manoeuvers exercised in dealing with the placenta, I will only insist upon the utility of the pad and binder. The compression exerted upon the abdomen and pelvis not only tends to provoke uterine contraction, but it counteracts the aspiration on suction force which tends to draw air; one of the factors of decomposition, into uterus. It opposes centrepetal osmosis. The day after labor it is useful to an aperient. It commonly happens that in the effort of defecation, the uterus, compressed and shaved in the diastaltic expulsive action, expells a clot. It then contracts more effectually.

The maintainance of contraction is efficiently aided by oxytocics. It has been my custom for many years to give after every labor a mixture of quinine, ergot and digitalis three times daily, continued for two or three weeks. The effect in contracting the uterus is remarkable. The patient will often say that she feels the womb contract soon after taking a dose. I look upon this measure as foremost in the scheme of antiseptic midwifery. It is shutting the gate in the face of the enemy.

The next thing is to wash out the uterus—plain tepid water may serve the purpose, but a solution of carbolic acid, one in fifty, is better. This should be done once or twice a day from the second day. On the first day, as we have seen, there is little risk of absorption, and it is important to disturbe the patient as little as possible. Should there be the slightest rise of temperature and pulse, this intranterine injection is imperative. Those who have used it can tell of temperature and pulse reduced, rigors and other signs of toxemia subsiding after each injection, and ultimately enabling the patient to pull through the most threatening illness. The injection is best done by a gravitation or siphon tube. Thus a gentle, uniform stream is insured, all jerking propulsions are avoided, and it is easy to exclude air.

The beneficial action of carbolic acid or Iodine injections is threefold: first, the uterus and passages are washed out; secondly, the lining membrane of the passages is stimulated in a healthy manner, so that it is less favorable to the reproduction of foul stuff; thirdly, some small portion of the carbolic acid or iodine penetrates the substance of the uterus,

and is absorbed into the system, thus chasing and neutralizing any poison that may have entered. Thus we follow the enemy through the gate which admitted it. The uterus and vagina, whilst serving as a septicode, are also made to serve as a passage for the antidote. Thus especially applies to iodine, which readily penetrates the uterine wall. We ought not to refer to intra-uterine injections to wash away septic stuff without grateful remembrance of Harvey the immortal, who thus cured a lady in imminent danger of death from septicemia.

The manipulations necessary for intra-uterine injection give valuable information as to the position and other characters of the uterus. A not common cause of retention of discharge is retroflexion or antiflexion. reduction should, of course be affected before injecting, and means taken to keep the uterus in site afterwards. In connection with intra-uterine injections, carbolic solution should be kept in the room. The catheter should be kept in it. If spongues are used, they should, be kept in the solution; but it is better to exclude them, and use soft tow soaked in the solution, and throw it away immediately after use. Instead of diapers which it has been proved are a frequent source of contamination, as "they come from the wash," but not from purification, some such contrivance as the "ladies' towel" should be used. These consist of light cotton-wool or tow, impregnated with carbolic acid or other antiseptic. They are burned after use. The physician and the nurse should practise no manipulation without previously washing in carbolic solution, and lubricating the hand with carbolized vaseline, religiously rejecting lard and other animal grease. The chamber utensils should be rinsed with carbolic solution, and a little of the solution always kept in them.

It is probably that sulphurous acid will be found even better than carbolic acid as an antiseptic. Carbolic acid in ovariotomy certainly acts sometimes as a poison to the patient and to those assisting at the operation. At St. George's Hospital we have lately used sulphurous acid with at least equal advantage, and without the toxical drawback. Dutrochet in his investigations on osmosis, found that the slighest trace of sulphurous acid stopped osmosis. It may be used in the proportion of one sulphurous acid to forty of water.

Whilst taking care to exclude foul stuff from the genital canal, we must be careful to exclude foul air from the lungs and skin. A supply of pure air is an obvious necessity, but too frequently frustrated. When the sun shines, open the windows. At night, especially, a fire is often the condition of good ventilation. If an Arnott's valve be adapted, the fire will then draw off the light foul air which rises to the ceiling, insuring a supply of fresh air from below.

It is of the utmost importance to guard against chill or any check upon the due action of the skin, lungs, kidneys and intestinal canal; that is, maintain in due working order the excretory organs.

Dr. Goodell has much insisted upon the drainage of the uterus as a means of getting rid of noxious stuff. The principle is admirable. There is no doubt that in the ordinary recumbent posture, blood and discharges are apt to collect in the lax uterus and vagina. Dr. Goddell recommends that that the patient should at times be raised into the sitting posture, to allow the fluids to drain off.

Where a woman is strong, and after a few days, this plan may, perhaps, (I emphasize perhaps) be adopted without disadvantage; but in the weakly subjects most prone to septicemia, especially after hemorrhage, sitting up has been followed by syncope and sudden death. If firm pressure be maintained upon the hypogastrium and antiseptic irrigations be duly observed, drainage is secured. At the same time, if the bed is properly made, so that the head and shoulders are hept at a slightly higher level than the pelvis, drainage will be fairly accomplished. The dorsal decubitus is more vavorable to drainage than the lateral. An effective barrier against the ingestion of noxious stuff from the parturient canal is to supply the system with healthy nutriment by the stomach. The more the system is supplied in this way, the less will it absorb from vicious sources. I believe Oldham was one of the first to lead the revolt against the old fashion of starving on gruel during the first week; but it is easy to err in reaction. During the first two days the system craves rest as well as food. Food that is not easily assimilable is apt to load the stomach lying undigested or badly digested. Light broth, beef tea, milk, toast or eggs, plain or variously combined, are enough for the first two days. Gradually more solid food may be added. Light stimulants are occasionally useful, but generally alcohol may be dispensed with.

We may summarize antiseptic midwifery in the following rules:

1. Keep the door shut against the enemy by maintaining contraction of the uterus.

2. Prevent the enemy from forming and collecting by irrigating the parturient canal with antiseptic fluids.

3. Eject the enemy as fast as he effects an entry; that is, keep the excretory organs in activity.

4. Guard the lying-in chamber against the approach of foreign prisons.

5. Fortify the patient against the attack of the enemy by keeping up due supplies of wholesome food.

HERNIA OF THE OVARY IN THE INGUINAL REGION.—A little girl, aged six months, was brought to the service of Prof. Beckel, of Strasburg,

presenting in the left inguinal region a tumor of the size of a pigeon's egg. The skin which covered it was red and inflamed, the tumor itself was hard, very painful and irreducible. It was situated at the external orifice of the inguinal canal. It was perceived for the first time three months ago, and was then about the size of a nut; and being reduced by a medical man it did not make its reappearance until a fortnight before admission into the hospital.

The child cried day and night, vomited frequently, and got thin. The bowels continued to act tolerably well. On examination, hernia of the ovary was diagnosed, and chloroform being administered, reduction having become impossible, an incision was made over the tumor, dividing the skin and subcutaneous cellular tissue, when the ovary was brought to view, enveloped in its sac. Incision of this sac gave exit to a few drops of colorless liquid. A silk ligature was thrown around the pedicle, which was formed of the fallopian tube. The wound was dressed antiseptically, and at the end of nine days the ligature fell, and the cure was complete at the end of thirty days. The section of that ovary included half an inch of the fallopian tube.—*St. Louis Med. News.*

SUTURES IN RECENT RUPTURES OF THE PERINEUM.—Dr. Veit advocates the immediate union of even the lesser ruptures of the perineum. To accomplish this there is need of no elaborate armamentarium—only needles and scissors are necessary. Dr. Veit recommends to begin at the perineum with the sutures; avoid deep vaginal sutures, and all superficial ones are unnecessary. After bringing the rectal mucous membrane together, the needle is passed through the perineum behind the frenulum and carried along parallel to the rupture in the vagina to the end, where it is brought through the skin. Other deep sutures can be entered under this; superficial stitches, if necessary, are placed between the deeper ones. Chloroform is only necessary in cases that are not operated upon immediately post partum.—*Ibid.*

PUNITUS VULVAE.—Dr. E. Besmier (*Louisville Med. News*) finds the following ointment most efficacious: R. Ung. diachyli, Ol. oliv. aa ozs. iv; 16.00 gm.—*American Medical Digest.*

CLITERODECTOMY.—Dr. George J. Engelman contributes a very valuable and interesting paper on this subject to the *American Practitioner* for January. He thinks the operation has fallen into undeserved disrepute, and advocates its performance in certain cases. His justification for the operation is based upon a recognition of the importance of reflex action in female suffering. He gives a complete record of one case (the only one he has ever seen) in which a lady fifty-two years of age was placed under his care for the following condition: She had always suffered much from

headache, and was very nervous, easily flushed by worry and excitement. She has had eleven children; menstruation had always been regular, but profuse, until about six years ago, when, after eighteen months of irregularity, it ceased altogether. The complains of nervous attacks, originating sensibly in the region of the chitoris, and culminating in melancholia. All the symptoms of the attack evidence a profoundly nervous condition, and great derangement of the general health. After lasting a variable period, these symptoms would suddenly disappear, and she would have two or three weeks of comparative comfort, followed by a fresh attack, until life became a burden. Examination revealed an irritated vulva, carunculae myrtiformes, and very much enlarged nymphae and clitoris. He removed the carunculae, and subsequently amputated the clitoris and nymphae. The patient made a good recovery, and while under his care was entirely free from bad symptoms. Some months afterward, however, when she had returned home, the old attacks came back with full force; but Dr. Engleman attributes this relapse to a return to her old habit of masturbation, which, of course, the presence of the nurse had prevented. The question therefore arises, whether her nervous attacks were due to the enlarged clitoris or to masturbation. This open up a wide field for investigation.—*Ibid.*

RULES FOR INTRODUCING THE UTERINE SOUND.—Dr. Cameron (*Glasgow Med. Journal*): It has been recommended in special cases; but it is better to avoid any examination during menstruation, and in no case should the sound be passed without previously having made a careful bimanual examination.

To introduce the utering sound, place the patient as in passing the speculum and pass two fingers of the right hand, viz., the index and middle up to the cervix, with the knuckles toward the pubes, and in the groove formed by the fingers glide the instrument along, keeping the concave surface directed backwards. Never forget to have the sound warmed previous to its introduction.

If the passage is straight, as in females who have never had children, the index finger will be sufficient to guide the sound. If the os is directed downward and forward, the instrument is passed into the cavity without rotating the handle; if the os is, however, directed downward and backward, the instrument is only allowed to enter the external os, and then the handle is turned so that the point of the sound may be directed upward and forward.

If there be any difficulty in making the instrument enter, this is often overcome by slipping the point of the instrument from the finger tip into the os.—*Can. Med. Record.*

[American gynecologists generally pass the sound through a Sims' speculum, the easiest way of doing so. In measuring the size of the uterus, a graduated sound with a slide attachment is employed in this country.] A. J. C. S.—*American Med. Digest.*

CARCINOMA OF THE NECK OF THE WOMB.—Dr. William Goodell (*Med. & Surg. Reporter*) in a clinical lecture on this subject said: In operations around the womb vinegar is one of the *best haemostatics.* In cases where union by *first intention* is desired, I should not care to use it; but where you have bleeding, and wish to check it, you should use vinegar. If you inject Mensel's solution into the vagina, its astringency is so great that it contracts the vagina to such an extent that you find great difficulty in your further operations.

This patient is thirty years old, married, and has had several children. I want to impress one thing on your minds; it is this: that carcinoma of the neck of the womb almost never occurs in a sterile woman. The inference therefore is, that carcinoma of the neck of the womb always occurs at the seat of a laceration of the cervix. On the other hand, when you come to cancer of the body of the womb, sarcoma, spindle, and round-celled, cylindrical epithelioma, if you choose, these, which are very rare, usually occur in old maids and married women who have never borne children.

We have here the typical leaden complexion which is supposed to be pathognomonic of cancer. After the operation that will disappear. This color is, I think, due to a sort of slow septicemia.

I shall now begin and rapidly break up these granulations with my finger.

The whole anterior neck of this womb is gone, and I have to be very careful not to get into the bladder. I shall now use this instrument. It is a gouge forceps, devised by Dr. Remey, of Cincinnati; the object is to have as little hemorrhage as possible; it is a very good instrument. The points which bleed are right in the cancerous mass, but after this has been removed the bleeding becomes less, and then it comes from the edges of the cervix, where the mucous membrane runs on the outside of the neck. In order to control this hemorrhage I employ pressure forceps, when necessary.

This operation is an exceedingly successful one, as a make-shift. This woman has been loosing a great deal of blood; she has had considerable pain, but not the agonizing pain that she will have in the course of a year. In cancer of the neck of the womb pain does not exist to any great extent, unless the disease has passed the internal os. This absence of pain often misleads physicians. When the disease passes the internal os the

sufferings are terrible. There is nothing which equals the suffering of a woman lingering on with the disease involving the uterine cavity.

I have now removed every portion of the cervix, and have a funnel-shaped opening leading up to the internal os. As I have said, the results of this operation are very good. The woman's life will be prolonged. Some patients will die from exhaustion; one patient died from the disease involving the stomach, and others die from involvement of the pelvic organs.

The whole anterior part of the neck is not only gone, but I am directly upon the wall of the bladder, and the connective tissues lying below it. There is a space about the size of a silver dollar, where the womb is entirely gone. I am, therefore, a little cautious in what I do in that direction.

I shall now apply the cautery (Paquelin's). In the former case I applied this cautery and the patient got perfectly well, or rather it all healed excepting a spot about the size of a ten cent piece. On a future day I applied nitric acid without doing any good. I then concluded to apply the hot iron, without saying anything to her about it. I did so, but she never winced, although she wondered where the smell of burnt flesh came from, and thought that something must have burned in the kitchen. You can, in almost all cases (there are some exceptions, to which I shall allude) pass the hot iron into the cervix without giving as much pain as by the application of nitrate of silver; but, on the other hand, just as we have painful hair (I remember seeing in my young days, a case of plica polonica), as we have cartilage sensitive, which is usually not so, so we do occasionally meet with a case of sensitive cervix.

Let me say one word about taking off the neck of the womb. Your books tell you to take off the neck of the womb with the hot wire, in preference to the cold wire, but I have given up the hot wire, for I have had secondary hemorrhage of the most frightful character after its use.

I do not like to tampon the vagina after this operation, for it keeps all the discharges in the vagina, but if I performed this operation at a private house, I should dip a sponge in vinegar, pass it into this cavity and leave it there for forty-eight hours, because the sponge has meshes, and into these meshes will dip the inequalities of the cervix. The cervix is going to contract, and every inequality of the cervix is going to find a corresponding depression in the sponge. If I remove the sponge in the twenty-four hours, I am going to tear away some of the surface, and may get hemorrhage. I, therefore, leave it until pus has formed. Suppuration begins in twenty-four hours, and in forty-eight hours has advanced sufficiently to allow the removal of the sponge. If at the expiration this time I find, when I catch the string fastened to the sponge, that it is not going

to come away with ease, I leave it for twelve hours longer. The danger from septicemia is not very great, for the whole surface has been seared with the hot iron, all the blood vessels and lymphatics have been sealed, and a clot has formed in their mouths.

She will begin to smell very badly after forty-eight hours; the vagina will be syringed several times a day with a carbolic acid solution. After the sponge has been removed, it will be syringed at least twice a day. I shall give her a suppository of one grain of opium when she is taken to the ward. The pain of which she will complain will be due to the pressure of the speculum on the coccyx. I always begin to give quinine after the operation. I try to cinchonize the patient within twenty-four hours, so that she will have buzzing in the ears. I give quinine because, in the first place, it is an antipyretic; secondly, it contracts the womb, so that the area of absorption is diminished; and thirdly, it is an antiseptic.

These cases are to be undertaken without any delay. Just as soon as you have diagnosed a carcinoma propose the operation.

One word in regard to the diagnosis. I do not think that any student who leaves this University will, when he lays his finger on a carcinoma, ever mistake it for anything else; but he may, perhaps, put his finger on a polypus, or a fibroid tumor projecting from the os, or on a bad laceration, and think that he has a cancer. I thought that it was impossible to blunder about a carcinoma; but last summer I had a bad case of laceration of the cervix, which the woman said was done when a child only five months old was born. The tissues were so everted and there were such friable granulations, that I could not at first decide whether or not it was cancerous. I examined the woman closely, and determined that cancer had not occurred. I then proceeded with the operation, which resulted in a perfect cure.

One diagnostic point is that cancer always has friable vegetations, and if it is an excavating cancer (usually they are excavating) you can feel a sharp edge around this cavity filled with friable vegetations. I compare it to the crater of a volcano. When the carcinoma projects into the vagina, you distinguish it from polypus and fibroid tumor by finding that in the latter condition the tumor projects through the mouth of the womb, and you are able to distinguish the neck of the womb, but in the former the cancer forms a part of the neck of the womb, and cannot be separated from it.—*American Med. Digest.*

TREATMENT OF PURULENT ENDOMETRITIS WITH ULCERATION OF THE CERVIX.—Dr. Cheron (*Le Progres Medicale*) remarks that patients suffering from a purulent discharge, the result of endometritis, with or without ulceration, are frequently unable to bear injections of such sub-

stances as coal-tar, which are particularly apt to dry the secretion. In such cases Dr. Cheron finds it useful to employ the following solution of tannic acid in glycerine:

Tannic acid, 60 grams; Snydenham's laudanum, 10 grams; neutral glycerine, 350 grams.

Dissolve the tannic acid in the glycerine by means of heat, without using water, then filter and add the laudanum, viz:, one or two dessert spoonfuls to be added to a litre of warm water; injections to be made morning and evening. The effect of the injections is to cause a rapid diminution of the purulent secretion. The pruritus and irritation of the external parts disappear, whilst the sensation of weight and pain are less felt after a few days. If there be no ulceration, the dose of laudanum may be increased to twenty, or even to thirty grams, without inconvenience.—*Med. Times.—American Med. Digest.*

SUPPOSED OVARIAN NEURALGIA.—Dr. J. W. McAfee reports the following case in the *Pacific Medical and Surgical Journal*, which he considers an inexcusable mistake in diagnosis, and showing the fallacy of treating symptoms. A young lady, aged 22, had suffered for six years from neuralgia of the right ovary. For the first three years the attacks were slight and irregular, gradually increasing both in duration and severity. She had received all kinds of treatment for three years without avail. She finally became quite melancholy. General health and menstruation regular. External examination revealed neither tenderness nor enlargement in the ovarian region. Examination per vaginam showed uterus enlarged, but not painful on probing. Anterior lip of cervix large, dark and congested; posterior completely denuded of its epithelial coat, and covered with large fungoid granulations, which had a tendency to bleed on the slightest provocation. From this granular surface was poured out a thick, tenacious discharge, streaked with blood and pus. After thorough cleansing, iodine was applied, and the parts dressed with absorbent cotton and bismuth cream. Ordered a douche of one gallon of hot water to be used night and morning and discontinued all drugs. The next day the anterior lip of the os was much swollen, dark and tense; with a sharp bistoury he made several punctures, which bled freely and gave much relief. This treatment was continued for ten days without much change. It was now determined to use nitrate of silver. The stick was applied freely to the denuded surface, as well as the cervical canal. It acted like a charm; the improvement was rapid and steady. After a few days the ovarian pain had almost entirely disappeared. After eight weeks of treatment the uterus was reduced to its normal size, discharge disappeared, and the cervix was reduced to a healthy condition. The ovarian neuralgia was completely cured.—*Med. and Surg. Reporter.*

SIGN OF PREGNANCY.—Dr. Delattre mentions in the *Gaz. des Hopitaux*, what he considers a constant sign of the beginning of pregnancy, namely, the almost complete disappearance of the phosphates from the urine. The author believes that they are condensed into the bones of the mother, forming osteophites, during the first months of intra-uterine life. During the last months, the fœtus developing rapidly, this reserve of phosphates is drawn upon, the bones of the child increase in weight, and the osteophites gradually diminish, until they finally disappear, usually after the first month of nursing. Where the mother is weakly, instead of having these reserves, she is compelled to borrow from her proper substance the necessary elements for the nutrition of the fœtus, and her strength becomes exhausted. In such cases the author recommends the use of phosphate of lime during the whole course of the pregnancy. —*Med. and Surg. Reporter.*

THE PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF ERGOT.—In the March number of the *New York Medical Journal and Obstetrical Review* Dr. Etienne Evetzky, of New York, concludes the publication of his Joseph Mather Smith prize essay on ergot. Although dealing mainly with the physiological and therapeutical actions of the drug, the author gives a comprehensive account of the history of the different varieties of ergot, their botanical relations, their microscopical structure, and their chemical composition; the methods of their production, collection, preservation, and preparation for medicinal use; the relations of ergot to other remedies, etc. In comparing the action of ergot with that of a number of other excito-motors of the organic muscular tissue, an arbitrary group of which, the author thinks, ergot may be taken as the typical representative, he remarks that strychnia is most closely allied to ergot in its effects, the main difference being that strychnia acts with far greater energy on the spinal motor centers of the voluntary muscular tissue. Digitalis is distinguished by its predominant stimulating action on the heart. The chief difference between the action of ergot and that of Calabar bean lies in the early occurrence of a paretic state of the voluntary motor apparatus after doses of the latter drug that are not quite toxic. Atropia and nitrite of amyl are mentioned as antagonists to ergot. For hypodermic administration we may use the extract, the fluid extract, or sclerotic acid, diluted in water, with or without the addition of glycerine or alcohol, which latter substances, the author thinks, do not improve the solution in the least. The solution should always be clear and not too old, and should be made somewhat alkaline if the injections are particularly painful. The solution should invariably be injected into the muscular tissue, and it is well to begin

with small doses. The therapeutical applications of ergot are considered under five heads: 1. Disorders of the circulation and diseases of the organs of circulation. 2. Paretic condition of the organs composed of organic muscular tissue, the circulatory system excepted. 3. Inflammatory and other morbid enlargements and growths. 4. Abnormal secretions. 5. Symptoms referable to the nervous system, and depending chiefly upon circulatory disorders within it. In regard to contraindications to the use of ergot, it should be used with extreme caution in patients with an enfeebled heart. Pregnancy is not an absolute contraindication. The use of the drug should be suspended during menstruation, unless it is given for some special condition of that function. To avoid disturbing the digestion it is best to give the drug by the rectum or hypodermically. The remainder of the article deals with the special diseases in which ergot seems capable of effecting good results.

VAGINAL OVARIOTOMY.—In the March number of the *New York Medical Journal and Obstetrical Review* Dr. W. H. Baker, Instructor in Gynæcology in Harvard University, relates a case in which he removed a suppurating dermoid cyst of the ovary *per vaginam*, and remarks that the success which now attends ovariotomy by abdominal incision renders the cases very few in which removal by the vagina would be the better method. He would limit it: First, to cases where the cysts are small and their contents bland, so that removal can be effected without difficulty, and without great danger of septic peritonitis from the escape of any of the fluid into the peritoneal cavity. Second, to dermoid cysts so small as to be removed through the vaginal incision without evacuation. In the case of an ovarian cyst firmly adherent in the pelvis, he believes the best operation to be that of drainage into the vagina, with subsequent destruction by suppuration or by the cautery.

REMOVAL OF THE UTERUS IN OVARIOTOMY.—In the *New York Medical Journal and Obstetrical Review* for March, 1882, Dr. Andrew F. Currier, House Surgeon to the Woman's Hospital, relates a case of removal of the uterus in connection with a multilocular ovarian cystoma, performed by Dr. T. Gaillard Thomas, and remarks that to remove a simple, free ovarian cyst is not a difficult operation, but that such tumors are not to be looked for in the majority of cases. From the record of more than fifty laparotomies performed at the Wowan's Hospital during twelve working months, he finds only nine done for ovarian tumors unattached to surrounding viscera. In several of these, other serious complications were present. The adhesions in the remaining cases were more or less firm, involving the necessary risks of hæmorrhage, septicæmia, and peritonitis. Three out of the entire number held such inti-

mate organic relations to the uterus as to call for the removal of that viscus. In one other case the uterus was removed on account of a growth developed from it. In others the portion of sac attached to the uterus was left. The ovariotomist should be prepared to take the bold step of removing the uterus when it is called for by such complications.

IODOFORM IN GYNÆCOLOGICAL PRACTICE.—Dr. Frank P. Foster, editor of the *New York Medical Journal and Obstetrical Review*, publishes in the March number of that journal some clinical notes on the use of iodoform in gynæcological practice, especially in pelvic peritonitis and cellulitis of a chronic form. The cases are classified according to the abnormalities ascertained to be present: 1. Cases in which inflammatory action was supposed to exist, or to have existed, but in which the uterus was freely movable without pain. 2. Cases in which the mobility of the uterus was but slightly if at all impaired, but in which motion of the organ was painful. 3. Impaired mobility of the uterus, with little or no pain on moving it. 4. Mobility of the uterus decidedly impaired, with pain on moving it. 5. Uterus nearly or quite immovable, with little or no pain on attempting to move it. 6. Uterus nearly or quite fixed, with decided pain on attempting to move it. 7. Cases of palpable inflammatory deposit. The most prompt and satisfactory results were obtained in the last group of cases—those of palpable pelvic exudation. Such cases, however, do better, according to the author's experience, under the more usual methods of treatment than those in which the exudation is not capable of detection by palpation, but is inferred to be present from conditions that can scarcely be explained on any other theory. But, while such is the case, it is quite as true, he remarks, that we now and then meet with bulky exudations that prove utterly rebellious to treatment. A good deal depends, no doubt, upon whether the deposit is of recent or of remote formation; and this question it is not always easy to settle in the cases of patients of whose past history we know nothing beyond what we may be able to elicit by questioning them. Taking the seven groups together, it seems to him that the patients progressed more satisfactorily, on the whole, than they would have done without the use of iodoform. It is true, he adds, that in the great majority of them the use of vaginal injections of hot water was prescribed, but it is no less a moral certainty that in many instances they were neglected by the patients. Their proper use being assured, he would esteem the three great remedies for chronic extra-uterine pelvic inflammation in the following order: (1) hot water, (2) iodoform, (3) galvanism. As to the best method of using iodoform in such cases, his preference is for its application to the upper part of the vagina, and his

practice is to tampon the whole vaginal canal with wicking. This prevents the application from being washed away with the discharge, and the tampon is often of great service by its mechanical action—steadying the uterus, sometimes exerting a gentle, even distension upon the deposit, and perhaps inducing mascular contraction. These tampons are almost always borne without pain or discomfort, and, from the fact that iodoform is an antiseptic, they may be retained for several days. His custom is, however, to direct their removal at the end of thirty-six hours. Not the least of their merits is that they effectually shut in the abominable odor of the drug. Used in this way, he has never known iodoform to betray the patient by its odor, although its taste is sometimes complained of immediately, showing that the substance occasionally makes its way into the uterine canal, or else is absorbed by the vagina more promptly than we are accustomed to expect in the case of medicaments introduced into that passage. For occasional use, as an anodyne; in acute cases, in which the patients are not likely to be asked embarrassing questions by strangers, and in which, as well as in cases of vulvar hyperæsthesia, it is an object to avoid meddling with the genital canal; also with patients who cannot have continuous treatment by the physician himself, the employment of rectal suppositories is a valuable resource.

A METHOD OF REMOVING BENIGN TUMORS OF THE BREAST WITHOUT MUTILATION.—Professor T. Gaillard Thomas, Surgeon to the New York State Woman's Hospital, contributes to the April number of the *New York Medical Journal and Obstetrical Review* a paper in which he expresses himself in favor of removing benign tumors of the breast as a rule, because the mere presence of a tumor in the breast usually renders the patient apprehensive, nervous and often gloomy, while, with our present improved methods of operating, the patient is exposed to slight risks, the danger of growth of the tumor is removed, and with this disappears at the same time that of the subsequent degeneration of a benign into a malignant growth. If, in addition to these advantages, we can add the avoidance of all mutilation to the person, we have strong grounds for departing from the practice of non-interferance. The method of operation described, Dr. Thomas has practiced thus far in a dozen cases. He distinctly states that it is entirely inappropriate for tumors of malignant character, and that it is applicable neither to to very large nor to very small benign growths, being insufficient for the former and unnecessarily radical in its character for the latter. The growths for the removal of which he has resorted to it have been fibromata, lipomata, cysts, and adenomata, and have varied in size from that of a hen's egg to that of a duck's egg or a little larger. The operation is thus performed:

The patient standing erect and the mamma being completely exposed, a semicircular line is drawn with pen and ink exactly in the fold which is created by the fall of the organ upon the thorax. This line encircles the lower half of the breast at its junction with the trunk. As soon as it has dried the patient is anæsthetized, and with the bistoury the skin and areolar tissue are cut through, the knife exactly following the ink-line until the thoracic muscles are reached. From these the mamma is now dissected away until the line of dissection represents the chord of an arc extending from extremity to extremity of the semicircular incision. The lower half of the mamma which is now dissected off is, after ligation of all bleeding vessels, turned upward by an assistant and laid upon the chest-walls just below the clavicle. An incision is then made upon the tumor from underneath by the bisteury, a pair of short vulsella forceps is firmly fixed into it, and, while traction is made with it, its conections are snipped with scissors, the body of the tumor being closely adhered to in this process, and the growth is removed. All hæmorrhage is then checked, and the breast is put back into its original position. Its outer or cutaneous surface is entirely uninjured, and the only alteration consists in a cavity at the former situation of the tumor. A glass tube with small holes at its upper extremity and along its sides, about three inches in length and of about the size of a No. 10 urethral sound, is then passed into this cavity between the lips of the incision, and its lower extremity is fixed to the thoracic walls by India-rubber adhesive plaster, and the line of incision is closed with interrupted suture. In doing this, to avoid cicatrices as much as possible very small round sewing needles are employed; these are inserted as near as possible to the edges of the incision, and carry the finest Chinese silk. After enough of them have been employed to bring the lips of the wound into accurate contact, the line of incision is covered with gutta-percha and collodion, and the ordinary antiseptic dressing is applied. If the glass drainage-tube acts perfectly, there is no offensive odor to the discharge, and the temperature does not rise above 100°; the tube is in no way interfered with until the ninth day, when the stitches are removed. If, on the other hand, the tube does not appear to perform its function satisfactorily, it is manipulated so as to cause it to drain all parts of the cavity, and warm carbolized water is freely injected through it every eight hours. On the ninth day, when the stitches are removed, the tube is removed likewise.

(To be continued.)

☞ All exchanges and works for review should be addressed ROCKY MOUNTAIN MEDICAL TIMES, P. O. Box, 1593, Denver, Colo.

BOOK NOTICE.

A System of Surgery, Theoretical and Practical. On treatises by various authors. Edited by T. Holmes, M. A. Cantab., Surgeon and Lecturer on Surgery at St. George's Hospital, Memb. Corresp. de la Societe de Chiourgie de Paris.

First American, from second English edition; thororoughly revised and much enlarged, by John H. Packard, A M., M. D., Surgeon to the Episcopal and St. Joseph's Hospitals, Philadelphia, assisted by a large corps of the most eminent American surgeons. In three volumes: Vol. I, Philadelphia, Henry C. Lea's Son & Co., 1881; H. L. Baldwin & Son, Denver, Colo., Sole Agents for Colorado.

The first volume of this noble work has reached us, and in seems unnecessary to notice at length a work so generally known to the profession. We therefore write more for the purpose of advising and even urging medical men to place it in their libraries, than to critically review it.

General Pathology, Morbid Processes, Injuries in General, complications of Injuries and Injuries of Regions are the heads into which the first volume is divided, and each is treated of in a manner satisfactory to the modern practitioner. The additions which it has received from prominent American surgeons have made it essentially a home production, and we cordially endorse the work. The three volumes will be critically reviewed in subsequent issues.

REPORTS OF CORRESPONDENTS OF THE NATIONAL BOARD OF HEALTH.

Atlanta, Ga.—Dr. James B. Baird writes, under date of April 8, reporting the first case of small-pox which developed in that city on the 3d instant in the person of a negro girl who had been a servant in a hotel. The patient was immediately removed to the pest-house, the inmates of the tenement where she was found were vaccinated and removed to a quarantine station, and the house was condemned and burned by order of the board of health. The girl died on the 8th instant.

Birmingham, Conn.—William J. Clark, postmaster, reports 4 deaths during the week ending April 1, 2 from cerebro-spinal meningitis and 2 from scarlatina.

Boston, Mass.—C. E. Davis, Jr., clerk, reports 32 cases of diphtheria, 6 of scarlatina, 2 of small-pox, and 7 of typhoid fever, during the week ending April 8.

Brooklyn, N. Y.—Dr. R. M. Wyckoff reports 5 cases of small-pox during the week ending April 8. He states also that 100 cases of small-pox occurred in Brooklyn between January 1 and February 26. Of this number 53 had never been vaccinated, of whom 31, or 58 per cent., died. Of the 47 who had been successfully vaccinated, 6, or 12 per cent., died. Among those who had been vaccinated 24 were adults who had not been vaccinated since infancy. Of these 3 died. Of the remaining 23, 20 had varioloid in mild form; 1, aged 3 years, who had been well vaccinated twice, once in infancy and again in 1880, died; two other children, aged 6 and 8 years respectively, members of the same family and having good marks of vaccination, died. The youngest person attacked with the disease was 3 months old, and the oldest 60 years.

Clinton, Iowa.—Dr. C. W. Myers, health officer, reports 1 new case of small-pox, brought from Chicago, during the week ending April 8.

Chattanooga, Tenn.—Dr. W. F. Hope reports an additional case of small-pox during the week ending April 8, making two cases now in the city.

Como, Miss.—Dr. A. A. Young writes, under date of March 31, that the town is free from epidemic diseases, but that there have been 18 cases of small-pox among the colored people in the southeastern portion of the county. The disease was brought from Memphis, Tenn. In De Soto County, on the Tennessee line, there have been 14 cases and 5 deaths from small-pox.

District of Columbia.—Dr. Smith Townsend, health officer, reports that during the three weeks ending April 1, 13 new cases of small-pox occurred in the District. Six cases resulted fatally. Of the thirteen persons who suffered from the disease, 12 were colored. In seven of the cases the persons had not been vaccinated prior to exposure, and in the remaining cases the patients had not been vaccinated within a period of five years. All of the cases were treated in hospital, and were classified as follows: Variola confluens, 7; variola maligna, 1; varioloid, 5.

The vaccine physicians report 10,832 vaccinations during the three weeks, making a total of 28,432 to April 1.

During the quarter ending April 1, 31 cases of small-pox were reported, of which number 14, or 44 per cent., were fatal; of these cases 2 were of white and 29 of colored persons. Twenty-four of the cases were variola, and seven varioloid. Nine of the persons had never been vaccinated, six only during infancy, and the remaining sixteen only after exposure to the disease. Of the total number of cases 29 were removed to hospital.

Flint, Mich.—Dr. H. C. Fairbank, health officer, reports one case of small-pox during the week ending April 8.

Eureka, Kans —Dr. A. M. Wassam reports, under date of April 7, that 6 cases of small-pox, 2 of which were fatal, occurred in one family in the county during the month of February. This outbreak was traced to clothing which had been found by the roadside and brought home by one of the members of the family; the clothing, as was afterwards ascertained, having been thus carelessly exposed by members of a family in which small-pox prevailed.

Fairfax C. H., Va.—Dr. R. W. Dorsey writes, under date of April 3, that malarial fevers have been more generally prevalent during the past year than ever before. The cases were mostly of intermittent type, and were easily controlled. During the last summer and autumn there were a great many cases of cholera infantum, the mortality being unusually great. Measles and whooping-cough have been epidemic in the county for the past two years, and have caused many deaths among children under five years of age. Many of the fatal cases occurred in colored families, whose homes are in a most unsanitary condition.

COMMENCEMENT OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF DENVER.

The First Annual Commencement exercises were held April 27th, at the Lawrence St. Methodist church, in the presence of the faculty, students and a large number of invited guests. Addresses were delivered by the Dean, Prof. H. K. Steele, Prof. Stedman, the Rev. Earl Cranston and Gov. Evans, who also awarded diplomas to the following named gentlemen who had successfully passed the examinations: Patrick V. Carlin, W. A. E. De Beque, Abijah Johnson, James O. Campbell and George H. Elliott. The valedictory was given by Dr. Geo. H. Elliott.

The success of the college is now assured, and a large number of gentlemen have already signified their intention of matriculating for the next term which will open in October next.

THE

ROCKY MOUNTAIN

MEDICAL TIMES.

A MONTHLY JOURNAL OF

MEDICAL, SURGICAL AND OBSTETRICAL SCIENCE.

JUNE, 1882.

OPHTHALMIA NEONATORUM.

By William Oliver Moore, M. D., New York City.

OPHTHALMIC SURGEON TO RANDALL'S ISLAND HOSPITALS, PROFESSOR OF COMPARATIVE OPHTHALMOLOGY COLUMBIA VETERINARY COLLEGE AND SCHOOL OF COMPARATIVE MEDICINE, ETC.

Ophthalmia neonatorum is one of the most terrible and destructive diseases that can effect the eyes of the new born. Fully one-half of the inmates in our Blind Asylum had this disease when only a few days old, and its ravages has caused them a life time of suffering. Scarcely a day passes but we see the sad picture presented at the various eye hospitals of a helpless infant, frequently only ten days old, sometimes much younger, in whom this disease has made sad havoc, one or both eyes being totally destroyed.

The question naturally arises, has science no means at her command to combat this disease? The disastrous results so frequently seen are not from lack of means, but from lack of applying sure and safe remedies to the unfortunate patient. The dullest practitioner, if called to see a case in which a discharge of pus so profuse as that coming from ophthalmia neonatorum, would, if on any other part of the body, immediately institute means to allay and check it, and would not for a moment advise "breast milk" as a lotion, which is so commonly done. Yet good general practitioners, when called to see a case of this sort, sit quietly by and with folded arms say, "It is quite common, and of no conse-

quence," a matter of "only a few days;" meanwhile the eyes are being rapidly destroyed, and the innocent victim is to reap a life time of sorrow for the indifference of the family physician.

Of five hundred cases treated at the New York Eye and Ear Infirmary during the past ten years, only fifty of the children were delivered by midwives; the others were under the charge of physicians. Thus in the majority of the cases the neglect can be traced to the physician in attendance. The more astonishing is the fact as this disease usually makes its appearance during the first ten days of life, when as a rule, the accoucheur is in daily attendance on the mother. Not until the great mass of the profession realize the importance of energetic and thorough treatment, will we cease to see the sad results now so common.

We would almost urge the reporting of every case of ophthalmia neonatorum to the Sanitary Bureau, that it might be investigated and have proper treatment. This would be of service, as all physicians diagnose the disease, though they are so indifferent to its treatment.

Many physicians may think this visionary and wild, but those who are familiar with the clinics of our special hospitals will recognize the force of the statement. The most frequent cause is improper cleansing of the child's eyes and face immediately after delivery, or from using in bathing the child, a soiled towel or sponge containing poisonous matter from the mother. Great care should be exercised in having a tidy and trusty nurse. Exposure to strong sunlight which is indulged in by too many, is another cause; as is also cold causing a catarrhal inflammation in delicate infants, rapidly degenerating into a purulent form.

This disease generally makes its appearance during the first three days of life, when either one or both eyes begin to show slight redness of the edges of the lid, and some injection of the ocular conjunctiva, together with undue moisture of the parts. The tissues of the lid being very lax in the infant, oedema of the lid, especially the upper, soon manifest itself, which has a red, and in many cases a purple hue. The swelling of the lids shuts the eyeball from view. The secretion which at first was only small in amount and mucous, has by this time become profuse and purulent. Frequently this purulent discharge runs down over the cheeks, especially from the inner canthi. The edges of the lids become agglutinated, and when finally separated, the pent up pus gushes out. It is this ichorous material which is a potent element in causing the destruction of the cornea, which so frequently happens where thorough cleansing is not practised. On inspecting the eye the palpelral conjunctiva will be found intensely injected over its entire surface, and especially inflamed and swollen at the retro-tarsal fold; the ocular conjunctiva is also much inflamed.

The conjunctiva is sometimes covered only with adhering pus, but in many cases the exudation takes on the character of a membrane, which can be stripped off as one piece, leaving a red surface from which bleeding takes place; this membrane forms again often in a few hours. It is essentially different, however, from diphtheria of the conjunctiva, and seems to partake more of a croupous nature. On examining the cornea we find diffuse or circumscribed haziness, or in more severe cases, deep sloughs. This necrosis usually causes destruction of the entire thickness of the cornea, allowing thereby prolapse of the iris, in some even escape of the lens, and subsequent panophthalmitis. A case is on record where both lenses escaped, and were brought by the mother to the physician in a wine glass.

The discharge and swelling of lids will last for several weeks when no active treatment is adopted, where at length, the eyes are either sightless or very much impaired. Such is the history of a case without any treatment.

The prognosis is favorable if the patient is seen within forty-eight hours of the attack, and as a rule, no corneal complication will occur. The exception is when dealing with very feeble and impoverished infants, where in adjunct to the local treatment we must add nutritious diet and tonics, otherwise we will fail to get good results. Prevention: More attention should be given by the physician to the first bath of the infant, and not leave the entire charge to a nurse, perhaps an ignorant one, much trouble and suffering might thus be prevented. All the bathing utensils should be perfectly free from any contaminating discharges of the mother. These small things well attended to will prevent many a case from developing.

Treatment may be divided into two parts—one to be carried out by the physician, the other by the attendant or nurse.

First. The patient should be seen daily, generally for two weeks. The first thing after having placed the infant in a convenient position, (viz., the head between the knees of the physician and the body and feet on the lap of the attendant sitting in front, in this way you have complete control of the legs) remove all secretion from the edges of the lids by a moist cloth, separate the lids gently and examine carefully the cornea. The eversion of the upper lid is much facilitated by the contraction of the orbicular muscle, caused by the infant crying; this point is an aid in the treatment as it greatly assists when making the application to the lid. If on eversion of the lids there is little or no bleeding from the conjunctiva, apply, after having removed all adherent secretions, by means of a camel's hair pencil, a solution of nitrate of silver (grs. v ad x—ag dr. i) carefully, to the upper and lower lid. A solution of common salt may

be immediately used after this to neutralize any excess of silver; this is, we think, unnecessary, as the secretions of the eyelids usually will accomplish this alone. The lids should then be gently replaced in normal position. The cornea should be inspected at each visit, and if hazy, a solution of sulphate of atropia (gr. ½–dr. i) instilled, twice daily.

This treatment is kept up daily until the swelling of the lids disappear, cornea clears up and secretion ceases. In those cases where on eversion of the lids much bleeding from the conjunctiva occurs, it is better not to use silver solutions unless very dilute (gr. i–dr. 1), using the cold water and other methods rather to combat the disease. When the conjunctiva becomes velvety or granular, we may apply every other day the "mitigated stick" (composed of nitrate of silver and potassa in varying proportions that marked 1:2 being preferable), finally using it only as occasion requires.

Second. The treatment by the nurse or mother. This is extremely important as the cardinal point is thorough cleanliness of the eyes. This is best accomplished by using bits of old linen, which can be burnt up after using, thus preventing further spread of the purulent secretions. Some commend the use of sponges, but it seems to us to have an element of danger, for if not thoroughly cleansed and disinfected, they may inoculate other patients. The application of cold to the eyelids should be continuous and carefully performed; and is best made by taking a block of ice 6 or 8 inches square, and placing upon it several squares of old linen about two inches wide and of not more than two folds in thickness, so that they will not press heavily on the lids. They should be changed so soon as they become warm and replaced by others; the cloths should not be wet but cold. Several cases of otitis media purwlenta acuta have been set up by cold water from wet cloths getting into the ear. These applications should be kept up as long as the child will tolerate them; they should be used also at night. In addition the eyelids should be carefully separated every hour and cleansed of all secretion adhering to their edges, and the secretion of the conjunctival cul-de-sac washed out with a solution of alum (dr. i–o i) by means of the ordinary medicine dropper or pipette; in this way only can thorough cleansing be obtained. Solutions of boracic acid, sulphate of quinine, or diluted chlorine water may also be used for this purpose, but never solutions of lead. Vaseline applied to the edges of the lids, acts a good purpose, and should be used often during the day.

This method faithfully carried out by the attendant will add largely to the safety of the eyes. The secretions being highly contagious, both the physician and nurse should be very careful to wash their hands after each application. The above treatment is, we believe, the one most

commonly practiced by ophthalmologists. We are certain that a patient seen within forty-eight hours, unless extremely debilitated, will have no impairment of vision, if subjected to the above plan. Care should be given to the general health of the mother and child, as often the virulence of the disease is due to bad nutrition.

The prolapse of iris and other complications occurring in the cases not under treatment early, need special care, which we will detail in our next paper. We trust more attention will be given to these cases in the beginning, and thus many eyes may be saved.

133 EAST 38TH ST., NEW YORK, N. Y.

ORIGINAL LECTURES.

A SERIES OF LECTURES ON DISEASES OF THE GENITO-URINARY SYSTEM.

BY W. R. WHITEHEAD, M. D.,

PROFESSOR OF DISEASES OF THE GENITO-URINARY SYSTEM, IN THE MEDICAL DEPARTMENT, UNIVERSITY OF DENVER, AND VISITING SURGEON TO VENEREAL DEPART., ARAPAHOE COUNTY HOSPITAL, IN CHARGE OF MEDICAL DEPARTMENT OF THE UNIVERSITY.

LECTURE X. IMPOTENCE AND STERILITY IN MEN.

GENTLEMEN:

This morning, without attempting to discuss the subject exhaustively, I shall endeavor to present to you some practical remarks concerning impotence and sterility in men.

Sterility in women has long been an interesting and seemingly more or less attractive subject of study; but it would appear that the causes of inability to procreate on the part of certain men have received less attention than they should, from a marked repugnance felt, to investigate that which so intimately concerns the amour propre of the male portion of society. The treatment of such matters has largely and quite improperly been relegated to irregular, incompetent and unscrupulous practitioners of medicine. If some of the efforts that have been made to discover the causes of sterility in women, had been applied to the study of the same subject in men, it is extremely probable that the large per centage of relievable cases of impotence and sterility in the male would have much lessened the female statistics of sterility, and at the same time

afforded a just explanation of the infecundity of certain women; and also given a satisfactory issue to treatment applied in the right direction. In approaching a subject of this kind, and which so intimately affects the welfare and happiness of many members of society, I desire that you consider the subject in its useful and practical bearings divested of triviality, and worthy of the most serious scientific study.

There is nothing of which useful medical science treats that should be regarded as offensive, or as unworthy of careful consideration; and as purity of thought is one of the best aids to the remedial measures for the cure of functional disorders of the generative organs, so will earnestness of purpose and scientific aim assist to a right and successful treatment of impotence and sterility in men. There is nothing in this subject to encourage immorality, or, when rightly considered, to engender impurity of thought; and the consciencious physician can with justice to his patient, and with perfect self-respect and dignity point out to him the proper means for his relief, without encouraging criminal intimacies or other self-abasement. This leads me to observe, as Curling remarks, that the function of the testicles, like that of the mammæ, remains dormant and inactive for years in persons of studious or recluse habits; and that these organs also remain healthy, and competent to secrete their peculiar product when excited to action; and it is especially the case in young men, that the testicles do not waste from long continued chastity.

It is wrong to overlook the importance of the generative function, and not properly appreciate the influence of this function, as affecting not only the existence, but to a greater or less degree all the relations and affairs of the human race. Man with higher pursuits and loftier aspirations that the mere gratification of animal desires, which an intelligent control subordinates to refining and intellectual pursuits, is the noblest type of animated creation, and with his platonic imaginings, and æsthetic tastes may forget for a time the presence of a dormant function, that is as much a part of himself as the heart that beats within his chest. Unconsciously, possibly to himself, this dormant function finds expression temporarily in vaporish manifestations that assimilate him to the opposite sex, and that but ildisguise, uncontrolled and unrelieved sexual desires. It is needless, therefore, to ignore the fact that, during the virile period of life, marriage is the proper condition of the sexes; and that nature asserts her claims, and that the regular and moderate exercise of the genital function, in such a manner as marriage life usually affords, is in accordance with the laws of nature, and conductive to the well being and happiness of the individual.

It is quite well known that an intelligent and moral restraint exercised over the sexual function, may be continued for years without serious

injury or impairment of this function, and this happily is conducive to the maintenance of those moral relations which are the foundation of the social fabric. It is also equally well known that uncontrolled and ungratified sexual longings aided by luxurious idleness and lacivious thoughts suggested by vicious associations, or pernicious influences, may give rise to functional disturbances of the sexual organs, as much so as sexual excesses or repeated masturbation.

Before proceeding further in my remarks, I should tell you that by impotence is understood the inability to successfully accomplish the sexual act, and which inability usually, but not necessarily, implies also sterility on the part of the individual. The testicles may secrete a proper fecundating liquid, but an incapacity to perform sexual congress offers an effective obstacle to impregnation. Then again, as in cases after double orchitis, or even after the entire removal of the testicles, the power to perform with apparently undiminished vigor the sexual act is retained, yet the individual is permanently sterile. In such cases after double orchitis the fluid ejaculated may present all the physical appearances as to quantity and quality and other characteristics of a perfectly normal spermatic secretion, and yet may be entirely deprived of spermatozoa; and this fact necessarily leads to the belief that the bulk of the ejaculated fluid is furnished by the prostatic secretion.

Sexual excesses during the decline of life seem to peculiarly favor hypertrophy of the prostate; and inaction or disuse of the sexual function late in life hastens the natural decline of this function. This decline of virile power commences usually about the age of forty years; but in exceptional cases of men of vigorous and temperate habits no diminution of sexual vigor is observed until somewhat later, and it is not until about the age of 65 or 70 that spermatozoa are no longer, as a usual occurrence, discovered in the ejaculated secretions, or in the testicles after death. The nervous disturbances that sometimes attend and follow the exercise of the genital function in the decline of life, or in certain debilitated conditions of the system are especial causes of danger, and may lead to paralysis in the aged, and to nervous exhaustion in young men. Masturbation when excessive, and irregular and immoderate sexual indulgence, as in fornication, induces or tends to induce irritability of the prostatic portion of the urethra, that leads to temporary impotence, and that may become more or less permanent. There are transient causes of impotence that should not be overlooked, such as disgust, fear or apprehension of failure or other emotional disturbances that show that the function of the testicle is under the influence of the brain.

There are also more serious causes of impotence, such as apoplexy, blows on the head or injuries to the spine. Numerous instances have

been related by Curling and others, that show that concussion of the brain, or injuries of the brain or spine, as from blows on the occiput or nape of the neck, from injuries received during railroad accidents, or from gun shot wounds, are sometimes followed by impotence more or less permanent. Defective development of the brain, as in idiots, is also said to be a noticable cause of impotence; and even where the brain appears to be normally developed, and the intellectual faculties for the most part are unusually active, yet impotence is occasionally present, marked by a cold indifference to all sexual feeling; and in such cases it is alleged that there must be some inherent and defective development of those parts of the brain which preside over the genital function. It is very difficult to trace the peculiar psychical causes that influence this function in a great many cases; but one of the most common and effective temporary causes of impotency is, a distrustful apprehensive of failure. But such want of self-confidence is readily controlled by encouraging advice, and the administration of a placebo, with explicit instructions to attempt no effort for a specified time, as is reported that Hunter and others advised; and this is especially suited to cases of men recently married.

The virile power is occasionally temporarily lost during an attack of dyspepsia, and with this may be associated, as Golden Bird and others have shown, deposits of oxalate of lime in the urine, accompanied with excessive depression of spirits and a feeling of extreme debility. The excessive use of tobacco, and the opium habit are also accused of causing impotence; but this probably is owing to the disordered condition of the assimilative functions and of the general impairment of the health thus induced. The effects of lead and of arsenic are also believed to be active in causing impotence. It is well known that abuse of the sexual function is a temporary, and may become a permanent cause of impotence; and the expression *blasé* is not more appropriately applied than to such cases. There are a class of idle and wealthy men who devote themselves to frivolous pleasures, and who seem to centre all their thoughts on the gratification of artificially stimulated sexual desires, and who would appear to think of nothing else. For such it is not to be wondered at, that the over-taxed and over-stimulated sexual organs should refuse to respond to their natural stimulus. In those cases where ordinary attractions afford but imperfect desire, the mutual and reciprocal affection excited between the sexes in a happily assorted union, as in marriage, serves to call forth the full and vigorous virile powers of the individual. I would remind you that sexual excesses promote diseases of the bladder, of the prostate particularly, and of the testicles.

Prostatorrhœa is, I believe, as much due, though not in the same proportion of cases, to excessive venery, as to the irritation of the deep

urethra, induced by excessive masturbation. You will recollect that I pointed out to you in the lecture on hypertrophy of the prostate, that erotic desires are often due to this disease; and I recently remarked to you that in the decline of life, excessive indulgence in the copulative act is promotive of hypertrophy of this gland. Locomotor ataxy is thought sometimes to be occasioned by excessive venery. Spermatorrhœa is generally a result of an inordinate excitement of the genital organs, occasioned by masturbation, and is an effectual preventive of a satisfactory accomplishment of the sexual act.

Detention of the testicles in the abdomen is not commonly a cause of impotence, but is usually of sterility; and this is due, most probably, to defective development of these organs. Persons thus affected, are called cryptorchids, and may possess to a vigorous degree, the power to copulate.

Allow me to call your attention to an important physiological fact, that erections are due to either stimulation of the cerebral centres, of the spinal cord, or of the peripheral nerves. Mental impressions such as occasioned by the sight, or thought of lascivious objects, or direct stimulation of parts of the base of the brain by disease, or the pressure of tumors, may call into more or less complete activity the phenomenon of erection. Disease of the spinal cord or injury or compression of the cord, are also effective in inducing complete or partial erections. It is notable that the compression of the cord that occurs in hanging, is attended by erection and the omission of semen, in men subjected to this form of capital punishment. Peripheral irritation of the glans penis, of the prostate, of the deep urethra, of the rectum, and of the bladder excites erection. The delicate and acutely sensitive nerves of the glans subserve a useful purpose in effecting and maintaining erection during the sexual act. The matinal distention of the bladder by urine is a frequent and well known kind of peripheral irritation, that excites and prolongs erection. This added to hypertrophy of the prostate, may, in some old men, lead them to misjudge of their virile powers, as is related of the debauched and dissolute Louis XV, who, boasting of his recovered potency, one of his old courtiers replied: Ne vous pressez pas de pisser, Sire!

There is a morbid sensibility of the prostatic portion of the urethra, occasioned by sub-acute and chronic inflammation of this part in stricture of the deep urethra, in prostatitis, and in those addicted to repeated and inveterate masturbation. Thus stricture, if very tight, prevents the ejaculation of the spermatic fluid and may, as also an excessive irritability of the deep urethra and imperfect erections, be a cause of impotency, as such almost invariably is, of sterility. Masturbation has long been regarded

as a possible, and also perhaps not a very infrequent cause of stricture of the urethra; but not until quite recently has this cause of urethral stricture received prominent attention. This is, I believe, because there has been a general incredulity to accept masturbation as an effective factor in the causation of stricture. I will admit frankly that I have no distinct recollection of having seen stricture to which I was led to trace masturbation as an efficient cause; but this may be owing to my faulty observation, and not having previously had my attention much directed to the subject. Dr. Samuel W. Gross of Philadelphia has recently published a treatise on Impotence and Sterility, and which contains some very interesting and startling statements concerning the frequency of masterbation as a cause of stricture. He makes the statement that "confirmed masturbation is just as sure to result in urethretis and the formation of a stricture as is gleet." I have not time at present to attempt an analysis of Dr. Gross' interesting publication on this subject and his numerous cases, but his remarks are worthy of more careful consideration, before attempting to express to you any decided opinion regarding this matter. I shall in future, and also advise you to, freely use the bulbous bougie to explore the urethra for stricture in cases of masturbators who present themselves for medical advice and treatment. Independently of his interesting remarks on this subject, Dr. Gross' book contains much that is valuable and most instructive, on the subject of which I am attempting in this lecture to give you an outline sketch.

As the result of masturbation, there is sometimes a very considerable hyperesthesia of the deep urethra, and in such cases, the frequent use of the steel sound combined with the use of the cold sitz bath may be advantageously essayed. The sound should be passed not oftener than once a day; but recollect, that the passage of the sound in the treatment of stricture should not be attempted near so frequently. Moderate athletic sports, or agreeable travel will also accomplish much towards restoring the disorded genital function to its normal vigor in such cases. I should again make a passing allusion to certain psychical causes that induce impotence, and not less remarkable are those abstractions of the mind which exert on the virile powers a paralyzing effect, and of which no more astonishing examples have ever been related than those mentioned by Roubaud, and Grimaud de Caux, and repeated by Van Buren and Keyes. Roubaud's famous case was of a young man "utterly impotent except in the company of a light haired woman, wearing curls, high boots, a corset and a silk dress;" the other case was that of a mathematician, absorbed with his mathematical problems, and whom it was necessary that his wife should make drunk, in order for him to effec to completion the sexual act.

I shall merely mention impotence as the result of malformations of the penis; and in alluding to impotence as the result of syphilitic orchitis, I shall in this place simply state that it may be relieved by large doses of iodide of potassium, with other appropriate treatment. Other diseases of the testicle, as cancer and tubercle, impair the virile powers. Contrary to popular belief, consumptive patients, according to Louis, Curling and others, decline in virile power. Disease of the abdominal viscera, and especially disease of the kidneys, are causes of impotence. I have already mentioned dyspepsia as a cause, and in such cases you should examine attentively the urine, for the octahedral crystals of oxalate of lime, and for deposits of the phosphates; and in such cases administer the mineral acids, as the dilute nitro-muriatic acid. Bear in mind that impotence may be associated with diabetes; and also recollect that in albuminurea, succeeding scarlet fever, that as late as from two to ten years afterwards, impotence may be occasioned by the renal disease; and in this case a pill of nux vomica given nightly and of cautiously increased strength, will prove servicable.

Impotence sometimes occurs in middle aged men, by a seeming perversion of nutrition, in favor of an accumulation of adipose tissue. These men grow fat and sleek, and the beard is scanty, and there is a marked indisposition for muscular exertion; and they approach somewhat the condition of eunuchs. The proper cure of such cases, if amendable to treatment, is to reduce the weight by a system of training like that to which athlets are subjected, together with the use of cathartic medicines. Phosphorus and Tr. cantharidis may be also cautiously employed; but dilute phosphoric acid and strychnia are useful. In certain young men with torpidity of the genital organs the Faradic current may be used. In those whose impotence is due to timidity, repose and encouraging assurances will prove of more avail than medicines.

I now wish to call your attention to the subject of sterility in the male; and remember that while impotence usually and necessarily causes sterility, yet a man may copulate vigorously and satisfactorily, and be utterly sterile; and if the propagation of the human race depended exclusively on him, it would become extinct. Not infrequent examples of such cases are observed in those affected with double orchitis. Defective secretion of the testicle may be only temporary, and rest conjoined with the use of tonics will relieve this cause of sterility. I have already mentioned to you the criptorchids, with malposition of the testicles, and with retention of copulative power, but absence of procreative ability. In the case of double orchitis, there is complete obstruction of the vasa deferentia, and consequently total absence of spermatozoa in the ejaculated fluid, which has apparently otherwise all the physical properties of healthy sperm. In such cases sometimes under proper treatment with iodide of

potassium and the bin-iodide of mercury, the indurations of the epidydimes may disappear and the procreative capacity possibly return, even after some years of sterility. Bi-lateral lithotomy may be a cause of sterility from section of the excretory ducts; and non-ejaculation of the sperm may result as in tight stricture and also cause sterility.

Aspermatism or the absence of spermatic secretion is a peculiar disease in which there is no ejaculation. Rigid erection of the penis may exist, and copulation may be continued indefinitely without an emission of semen; yet the subject of this complaint may have erotic dreams with copious emissions of sperm. The causes of this affection are not clearly understood, but are undoubtedly sometimes traceable to defective or perverted nervous influences, as anesthesia of the prostatic urethra, or to an atonic condition of the muscles about the sermial vesicles or ejaculatory ducts. I must bring this lecture to a close, but before doing so I desire to emphasize one cause of sterility which I believe to be very common, and that is the destructive influence on the spermatozoa of all purulent and muco-purulent secretions of the urethra, prostate and bladder. My observation has shown me that the spermatozoa are sensibly affected and killed by such secretion, and I am pleased to see that Dr. S. W. Gross lays considerable stress on this cause of sterility. Hence, then, wherever there is a secretion of muco-pus or of pus in the urethra, as in gleet, stricture or prostatitis, then the co-mingling of this purulent product with the semen is as destructive to the spermatozoa as that from endocervicitis or endometritis. We treat these diseases in women to cure sterility in them; but it is equally necessary to cure the diseases that occasion mucopurulent secretions of the deep urethra of men to remove a cause which is as effectually destructive to the spermatozoa.

LECTURE XI. CHANCROID.

GENTLEMEN:

Chancroid is a very contagious venerial sore, usually found on the genital organs, but may occur on any part of the body exposed to the action of the chancroidal virus. This sore is sometimes known as the soft and non-infecting chancre. It is entirely local in its effects, and is never followed by constitutional results like the syphilitic chancre, and is thereby prominently distinguished from it, which is always succeeded by manifestations of constitutional syphilis, unless they are repressed by an appropriate anti-syphilitic treatment. Chancroid is auto-inoculable, and may be reproduced indefinitely on the same individual; may be communicated from man to animals, and from these to man, and may be reproduced even on the pathological tissues of the body, as it is stated on the epithelial cancer tissue of the uterine cervix.

Chancroid has until within a quite recent period, and is still sometimes confounded with syphilitic chancre, or with mucous patches on the genitals, and the patient needlessly subjected to treatment for syphilis. To those who are now familiar with the clinical history of chancroid, it seems at first sight almost incredible that the inoculation of chancroidal pus has even within the last decade been practiced under the name of syphilization for the supposed protection of the system against the re-infection of syphilis, just as the inoculation of the small pox virus was practiced a hundred years ago as a protection against an unanticipated attack of variola. It is not much more than twenty years since chancroid was differentiated from syphilitic chancre by Ricord, Bassereau, Clerc and others, and the doubts in the minds of even syphilographers respecting the nature and clinical aspects of the two different sores have yielded very gradually to accumulated facts which establish the non-identity of the chancroidal and syphilitic virus; and the battles of the so-called dualists and unicists, are now, I hope, happily ended, and will remain only as land marks in the progressive history of syphilis. I particularly remember the tentatives of the venerable Professor Boeck of Christiania, Sweeden, who visited this country about twelve years ago. The term syphilization is due to Auzias Turenne, who nearly forty years ago first commenced his experiments with the inoculation of chancroidal pus, sometimes possibly by mistake, using the syphilitic virus, and giving his patients constitutional syphilis, and thus increasing the confusion in his mind concerning the nature of this disease. Remember gentlemen, that it was not much more than twenty years ago, that Clerc adopted the expression chancroid, to distinguish this sore from that which is followed by constitutional syphilis. A certain number of observers from the time of Franco, to the time of John Hunter and to that of Ricord had noticed the difference between the two kinds of venerial sores, but without however, disassociating one of them from syphilis.

One of the most prominent and valuable diagnostic differences between the two kinds of inguinal buboes that follow these sores was overlooked. The chancroidal bubo which appears in about one-third of the cases of chancroid, inflames and suppurates; the indurated, multiple, indolent and painless buboes, nearly always constant in syphilitic chancre, rarely, if ever suppurate. Now this is a very important distinction for you to recollect. Franco, a most sensible old French surgeon who published a multitude of valuable observations for his time, 1561,* thought that by means of a suppurating bubo, the syphilitic virus was expelled

* Traite des Hernies p. 191: "De sorte, que par le moyen d'un bubon, ou poulain on est exempt de la verole."

from the system, and he, and the observers long subsequent to his time, little suspected that this suppuration of an inguinal bubo is generally the best evidence that the venerial sore on the penis, and which causes the bubo, is not syphilitic.

Chancroid is most frequently seen among the lower classes of society. I shall proceed soon to point out to you some of the characteristic features of this venerial sore.* Neglect and want of cleanliness are obviously the cause of the greater frequency of chancroid over syphilitic chancre, in those who from their associations and habits, are more exposed to such a contagious venerial affection, which is auto-inoculable and rapidly multiplies, so that the vagina of a woman with chancroids may remain a long time the *foyer* of contagion for all who have approaches with her, and thus the disease spreads probably, as a general rule, more among the poorer classes than among those who are better able to procure proper attention and can exercise more case with their persons. Amomg those who are more cleanly, and who take the precaution to wash thorougely after sexual congress in suspected cases, the risk of contageon is much lessened. While chancroid is thus relatively more common among one class, yet syphilis is the not infrequent heritage or accident of poor and rich alike. Herpes, abrasions and syphilitic chancres are more frequently observed in private, than in hospital practice, as a rule, among those who devote any special study to venerial diseases. You will not fail to see cases of syphilitic chancres at the hospital, and amply sufficient to illustrate to you most that I shall have to tell you about syphilis in the remaining lectures of this course. I have shown you a few cases of chancroid already at the hospital, and in two cases of syphilis I pointed out to you the typical differences between syphilitic chancre and chancroid, and in one of these cases with phymosis, and in which I incised before some of you the prepuce, there were mucous patches on the penis that had very much the appearance of chancroids. You will recollect that I showed you the hard multiple and painless buboes in each groin in this case, and which alone was sufficient to distinguish the nature of the sores; and besides, Dr. P. Carlin, the resident physician, at my request inoculated the patient on the arm, and the pus proved not to be auto-inoculable. The patient is improving rapidly under an anti-syphilitic treatment.

There is one case of chancroid now at the hospital, which a few of you saw, in the subject of an Italian, and which covers two-thirds of the penis and is not less than four square inches in extent of surface; the edges of which I cauterized with a saturated solution of carbolic acid, dusted

* This lecture after rivision, is a combination of two lectures in one on this subject; one of them purely clinical.

iodoform on the sore, and dressed it with oakum, and the sore has stopped spreading and looks healthy.

The chancroid varies in size from about the eight of an inch, to a surface as large as the hand and even larger, occupying the abdomen or inner surface of the thigh, but usually the chancroidal sores are about the size of a half-dime, and are situated near the frænum, or on the prepuce or the glans penis; but may be found anywhere about the genitals, or around the margin of the anus in women. The secretions of the vagina, and vulva mixed with chancroidal pus escape and trickle down about the anus in women while in the recumbent posture, and hence the liability of women to chancroids about this orifice. The extension of a chancroidal sore from the anus to the ampula of the rectum is easily effected; and chancroidal ulceration of the rectum occurs, and this disease is indefinitely prolonged until the chancroidal virus in course of time, looses its virulent contageousness as it may do elsewhere. The ulceration of the rectum, however, continues, and ultimately results in stricture of the rectum, which from this cause is common and occurs exclusively in women,* while from simple ulcers or cancer, rectal stricture is rare, and from syphilis, as gummy tumors of the rectum, altogether exceptional.

One characteristic of the chancroid is its auto-inoculability, so that sometimes the co-existence of many chancroids close together, by an extension of each, the coalescence of the different sores produces extensive chancroidal ulcerations such as I have just mentioned. Chancroid has scarcely, if at all, any period of incubation like the syphilitic chancre. Within a few hours, or within a day or two at most, a faintly inflamed areola appears at the point of contageon, which is the seat of an abrasion or fissure; or it may be that the irritating and acrid chancroidal pus, long in contact with the exceedingly thin and delicate skin of the prepuce, has croded its surface, thus producing several chancroidal sores. Usually there appears a small acutely pointed vesico-pustule which, if not broken, becomes of ecthymatous appearance, just as a few of you may have observed on one of the men at the hospital (the Italian) with extensive chancroid, and who probably inoculated himself with his poisoned finger nails by scratching his arm. This little pustule was not larger in size than the one-fourth of a dime. It is rarely that you can observe the chancroid in its pustular stage, because usually the pustule soon breaks and leaves a circular ulcer, which in this respect is much like the syphilitic chancre. The chancroidal ulcer soon enlarges, becomes more or less deep, its edges sharply and perpendicularly cut somewhat as if the edges had been cut

*See my publications on Stricture of the Rectum in Amer. Jour. Medical Sciences, of Jan., 1871, and of July, 1872; also Arch. Gen. de Med., Vol. V. 5eme Serie 1854, p. 666 par M. Gosselin.

with a punch. As the sore extends they may become irregularly circular, undermined and inverted; there is a dirty grayish and more or less smooth bottom to the ulcer which secretes a purulent or apparently mucopurulent moisture. The moist character of the sore is usually a valuable distinction between this and the syphilitic chancre. There is no induration of the edges of the chancroid except that caused by inflammation, and this induration when it exist is not sharply defined and abrupt as in syphilitic chancre, but looses itself gradually in the surrounding tissue about the sore. Inflammation characterizes the chancroid, induration the syphilitic chancre. Hence the expression formerly so common of indurated or Hunterian chancre, to distinguish the syphilitic sore from the soft chancre or chancroid.

If formerly physicians mistook the eruption of measles for that of scarlet fever, it is not astonishing that a local contageous disease affecting the genitals, and often co existing with syphilitic sores or mucous patches should be mistaken for syphilis. In fact, it requires attentive discrimination sometimes, not to mistake the mucous patches of the genitals for chancroids. The inflammatory character of the chancroid makes it a painful and angry looking sore, that appears suddenly and soon after sexual intercourse, and alarms the patient generally much more than a little insignificant looking and painless pimple or erosion on the penis, such as the initial stage of syphilitic chancre, and that usually comes three weeks after a suspected intercourse, and at a time when suspicion has been lulled. Chancroid most commonly is multiple, while syphilitic chancre is single, unless the surface exposed to syphilitic contageon presented a number of abraded or eroded points that received the contageon at the time of sexual congress; because syphilis or syphilitic chancre is not auto inoculable, but chancroid is characteristically so.

The chancroidal bubo appears generally as a prominent, inflamed and painful swelling in the groin on one side, though occasionally such a swelling may occur in the groin on each side; but this, however, is rare. The swelling becomes more prominent, fluctuation may be perceived, and the bubo suppurates, if efforts to prevent such have failed. The pus from this bubo is as virulent and as contageous as that from the original chancroidal sore. It is the extension of the ulcerative action in such buboes that causes the great destruction of the tissues of the groin and abdomen, that are sometimes seen and which may make the chancroidal ulceration a most formidable disease. Happily such cases are now of rarer occurrence than formerly. Owing to a depraved condition of the blood, phagedena may attack the sore, and the most nutritious diet with tonic remedies and appropriate local treatment are urgently needed. If the surface of the sore is not too extensive it may be touched with the acid

nitrate of mercury, and then dusted with iodoform and covered with lint. The iodoform may be mixed with tannin. Mercurial ointment or black wash, which act well on the induration of a syphilitic chancre, are uesless, and indeed, rather hurtful to chancroid. I have found the saturated solution of carbolic acid about as useful, if not more so, than the acid nitrate of mercury or other strong mineral acids. And if the sore is too extensive to cauterize much of it, then the edges only may be cauterized to stop it from spreading; and a piece of lint soaked in a solution of tartrate of iron and potassa of about two drachms to four ounces of water may be spread on the ulcer. The tartrate of iron and potassa may be also administered internally. Powdered oxide of zinc and bismuth may be used topically; but iodoform, though a foul smelling application, is one of the best local remedies for chancroid, and is in fact, one of the best that is known.

When a chancroidal bubo is just forming, and before suppuration commences, you may make an attempt to prevent its further progress by requiring your patient to remain in bed, and painting the swelling several times a day with the tincture of iodine, or better still, with a mixture of tincture of belladonna and fluid extract of ergot, such as I recommended you to use in sub-acute orchitis. If suppuration should not be checked, then you should poultice the bubo with flaxseed meal poultices, and lance it, which should afterwards be managed like the chancroidal ulcer. I merely mention in this place, that you should recollect that a simple inflammatory bubo comming on during acute urethretis, or after some injury of the lower extremity, and extension of the inflammation by the lymphatic vessels, may also suppurate; but the pus of a chancroidal bubo is highly contageous and auto-inoculable. Strumous enlargement of the inguinal lymphatic glands may also suppurate, but the history of the case will assist you in detecting the nature of the enlargement. However, it is possible that a scrofulous subject may contract chancroid, and a strumous swelling complicate a chancroidal bubo. If phymosis or paraphymosis complicate chancroid, the most unremitting attention is required to keep the parts clean, by means of disinfectant and astringent washes. For this purpose use a small glass syringe when needed, and incise the prepuce only as a last resort; because the cut surfaces will almost surely be infected with the chancroidal pus. But of phymosis and paraphymosis as a complication of venerial sores, I shall have more to say in a future lecture.

ORIGINAL TRANSLATIONS.

THE HEREDITARY TRANSMISSION OF SYPHILIS.

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(*Continued from May Number.*)

XI. *Viability of Syphilitic Children.*—Besides the early interruption of the pregnancy, and partly in connection with it, the degree of viabilty of the child, as an adequate expression of the intensity of its infection, is also of great importance. It is evident that the severe infection inherited by the fœtus, during the first years of parental transmission, almost entirely extinguishes its viability, that this capability of life again increases in the children procreated in the later stages of the parental disease, and, finally, in the last period of the heredity, it is either not at all injured, or else in a scarcely noteworthy way.

In order, now, to judge of the relative number of those children who succumb entirely to a syphilitic inheritance, we must take into consideration, not alone the number of still-births, but also those children who, indeed, are brought into the world alive, but succumb to the intensity of their inherited affection, either immediately after birth or a short time thereafter. The number of the still-births may be very exactly determined; not so, however, the number of those succumbing to congenital syphilis as such. But, nevertheless, in order to establish an approximate estimate, I have regarded those children affected with hereditary syphilis, who died within the first half year, as yielding to the inherited dyscrasia, and have not looked upon those cases of death *after* the first half year as in any way connected with syphilis. The few errors connected with this view may so partly counter-balance themselves for the reason that, upon the one hand, probably before the end of the first half year, death could be attributed occasionally to an intercurrent malady; but, upon the other hand again, death after this time may still be occasioned by the inherited syphilis, if even only indirectly. Moreover, the greater number of deaths took place within the first weeks and months of life; and, under such circumstances, the connection with syphilis is undoubted.

Accordingly, we divide the 330 children of 119 syphilitic marriages observed by us into three categories; namely, into still-births, into those dying within the first half year, and, finally, into such as have lived through the first half year, furnishing us the following data:

	Still-Births.	Those dying in the First Half Year.	Remainder.	Together.
I. Father alone syphilitic.....	26	21	58	105
II. Mother alone syphilitic.....	18	5	17	40
III. Both parents syphilitic.....	28	24	24	76
IV. Condition of inheritance doubtful.....	39	30	40	109
Total.....	111 (33.6)	80 (24.3)	139 (42)	330

It results then from these figures:

1. That of all children, procreated during the existence of parental syphilis, *exactly one-third are born dead.*

2. That of those born living, 24 per cent. succumb to the inherited dyscrasia during the first half year.

3. That in accordance with this, if we add the still-births and deaths within the first half year together, we obtain the sad result that, of all children who inherit syphilis from their parents at the time of procreation, 58 per cent., consequently *nearly three-fifths die*, and only two-fifths escape death as a direct result of their disease.

The causes of this remarkably slight viability of syphilitic children are to be found in the following points:

1. In the frequent interruption of pregnancy before its normal termination, which, as we have seen, occurs in one-third of all the births. The capability of life in these premature births is exceedingly small. Of the 31 children born before the sixth month of pregnancy, all were dead; of the 48 at seven months, 40 were dead at birth, and of the 48 at eight months, 31 were still-born, consequently, *of all the 127 syphilitic premature births, 102 exactly four-fifths, were still-born.* The fate also of the remaining fifth was soon decided: for 11 died during the course of the first day, 7 in the further course of the first week, 4 still before the end of the first month, and only 3 survived the first month of life.

2. In the severity of the affection in those born living, at full term. The outbreak of the disease in some cases occasions fœtal death still within the uterus, and, altogether, 9 such children were still-born at the normal end of pregnancy; in other cases the fœtus survives the eruption of the disease *intra uterum*, and is brought into the world with undoubted

syphilitic lesions upon the skin, nasal mucous membrane, epiphyseal cartilages, etc. These latter also show almost unexceptionally a very slight degree of viability, and die usually during the first days of life. Nevertheless, I have but recently observed the spontaneous cure of an extensive congenital bullous syphilide in a child born at term:

It was the third child of a mother, found upon examination to be healthy. Both the preceding children were still-born. This child at birth was nearly of normal weight, and 52 centimetres in length. Upon the face, buttocks and extremities, were bullæ in size from that of small peas to beans, which burst for the most part soon after birth. They were situated almost without exception upon an infiltrated portion of the skin, which extended slightly beyond the outer edge of the bulla. Apart from these there were several papules from which the epidermis was not removed. The placenta was entirely normal. After fourteen days the efflorescence had entirely disappeared, and the child seemed well. It succumbed, however, when six weeks of age, owing to the unfavorable conditions for its nutrition, because, according to the existing rule, it was removed from its mother, and artificially nourished in the foundling asylum.

Such viability in a child which, even when born, evidences such external syphilitic lesions is, however, extremely rare, and is to be observed almost alone in children of considerable weight.

3. *In the delay in physical development of the child*, occasioned by the inherited disease manifesting itself in the intensely poisoned individual before the outbreak of perceptible symptoms, even within the uterus, and which finds its statistical expression in the *weight.*

Kleinwachter (*l. c.*), for instance, in 46 children of syphilitic mothers in the Prague Lying-in Asylum, found only three above normal weight, and these were all born living. The remainder weighed:

26	(23	living,	3	dead)	between	2,920 and	2,800 gramm.
13	(8	"	5	")	"	2,800 "	1,680 "
4	(1	"	3	")	less than	1,680 gramm.	

Slawjansky (*l. c.*) even observed once the seven months' fœtus of a syphilitic mother, which weighed one-half pound Austrian weight (instead of the normal three pounds); Baerensprung (*l. c.*) an eight months' fœtus weighing 1½ pounds (instead of 3½). Frankel (*l. c.*) saw in two almost mature fœtuses a weight of 1,167 and 1,750 gramm., consequently scarcely half the normal weight.

The weight of living or still-born children, seen by me immediately after birth, was also regularly under the normal.

But, even in those syphilitic children born living and viable, the weight of the great majority, even at birth, before the disease comes to light, is less than normal.

In the 44 children born in the Vienna Lying-in Asylum, a portion of whom had pronounced syphilis, and the other portion, owing to the syphilis of the mother, were regarded as being in a latent stage of hereditary syphilis, their weights upon their entrance into the foundling asylum were found to be 2 to 3 pounds in 2, 3 to 4 pounds in 13, 4 to 5 pounds in 13, 5 to 6 pounds in 16; all, therefore, less than normal.

Also in those cases which form the chief part of my material for observation, namely, those children seen in the ambulatorium affected with hereditary syphilis, who, of course, were almost all viable, and for the most part several months old, presented very often upon their reception a significant disproportion between the weight found and that which it should be according to their ages; and, indeed, of 87 congenitally syphilitic children who were weighed, 53 were under, and only 34 of and above the normal weight. Here, however, we must bear in mind that these children were very frequently the last, and still more frequently one of the last members of a series of brothers and sisters, inheriting like them the same disease from the time of procreation, and that they consequently were subjected to a very much modified influence of the virus in regard to their nutrition.

4. Further, where the nutrition is good and there is an apparent freedom from the disease at the time of birth, the viability is, nevertheless, in a high degree compromised, owing to the latter *outbreak of the disease* and its consequences, which will be more extensively discussed in the symptomatology. The danger for the child is, however, always less the longer after birth the outbreak of recognizable symptoms takes place; and, as we shall see that the interval between the birth and the eruption of the exanthematous lesions is, in a certain sense, proportionate to the duration of the parental transmission power, we shall, consequently, find further a proportionate and constant increase of the capability for life in those children to whom syphilis is transmitted at a later stage of the parental disease, therefore in a less intense form.

This explains also, the widely different views of various writers, with different kinds of material for investigation, upon the viability of hereditary syphilitic children. In the *syphilitic wards* in which, for the most part, women are admitted during the first years of the disease, and where, therefore, chronic forms are comparatively rare, the birth of a viable child with hereditary syphilis is of unusual occurrence, as may be seen from the reports of Pick (*l. c.*), Engelstedt (1872), Bergh (1868–'69), and others.

In *foundling asylums*, that in Vienna for instance, into which children are transferred from the lying-in asylum, as a rule, when ten days old, viability is on an average considerably heightened; because here, not only the children of women with recent syphilis, but all children of a certain class of people are represented, consequently also all stages of the syphilitic inheritance, with the exception of the absolutely non-viable, which are either still-born, or die in the lying-in asylum. If here, notwithstanding, the ratio of mortality of congenitally syphilitic children is greatly increased (from 1854–'68, 337 out of 400 children with hereditary syphilis died, consequently 84 per cent.), this is more to be attributed to the well known and partly unavoidable unfavorable state of affairs in a foundling asylum; and, upon the other hand, to the circumstance that such children, if their mothers are syphilitic, are removed from them at once, and are either suckled by other nurses, or at the outbreak of their disease are artificially nourished, and thus given over to certain death. In fact, we learn also from the reports of the institution (*l. c.*) that the children who recovered, 16 per cent., were almost unexceptionally children who had been nursed by their own healthy mothers.

In the *childrens' hospitals* and *ambulatoria* again, the surroundings are, of course, much more favorable. On the one side, we hve here only children positively viable from birth; on the other, they are in the greatest number of cases suckled by their mothers (according to my notes, of 133 children only 7 were not at the breast); and, finally, we must take into consideration the remarkable influence of a mercurial treatment upon those children congenitally syphilitic. To these factors is to be attributed the surprising result that, in our ambulatorium, the mortality among children treated for hereditary syphilis scarcely exceeds that among non-syphilitic children, and that death, as a direct or probable consequence of the inherited disease, is of the greatest infrequency. On the whole, of 133 children with syphilis hereditaria, 21 died; but 12 only during the first half-year; 4 in the second half-year; the remaining 5, between 1 and 3 years. Further, of such children as died during the first half-year, I can ascribe but 5 cases directly to syphilis; all of the remainder, those dying in the first half-year as well as those dying later, fell ill from intercurrent diseases: inflammation of the lungs, whooping-cough, variola, acute intestinal catarrh (among these, two artificially nourished), etc., after the complete cure of the syphilis. But even should we regard all deaths within the first half-year as the direct or indirect consequence of hereditary syphilis, we have still a ratio of mortality of scarcely 8 per cent., a result which forms a striking contrast to the assertion of Zeissl (1873), who holds syphilis hereditaria to be an absolutely

fatal disease, and who specially had never seen a child recover from syphilis hereditaria maculosa, or pustulosa. He has based his assertions apparently only upon observations made in syphilitic divisions and lying-in asylums.

As it is of great interest, and of importance not to be undervalued, to know how long a period, as a rule, must elapse from the time of the inoculation of the progenitors until the intensity of the heredity is to such a degree modified that the fœtus may be viable, I have, in all cases under my observation, in which the time of the infection could be ascertained nearly with certainty, calculated the time which had elapsed from the inoculation up to the birth of the first viable child (after others not viable). The result of this calculation was that: in 1 case it was 7 years; in 8 cases, 6 years; in 8 cases, 5 years; in 5 cases, 4 years; in 7 cases, 3 years; and only in 2 cases was it less than 2 years from the inoculation of the progenitors until the birth of the first viable child took place. Consequently, in almost all cases, it is only after three years, in more than half, only after five years that the first viable child is born. But, in the two cases under two years, it is certain that the mother (who in both instances was the only parent affected) underwent a very active mercurial treatment.

The very great practical importance of this, which we have already in part discussed, induces us to again state as follows:

That only very exceptionally during the first (3) years of a spontaneously disappearing parental syphilis is it possible for a viable child to be born.

XII. *Time of the Outbreak of the Perceptible Symptoms of Inherited Syphilis.*—Although the consideration of the first outbreak of visible symptoms belongs under the head of the symptomatology of inherited syphilis, and must there find a thorough treatment worthy its importance, yet the subject cannot be here entirely thrown aside; for the reason, that the varying duration of the latency of the symptoms in the child is an evidence of the varying intensity of the inheritance, in so far that the eruption follows so much earlier, the more intense the poisoning of the fœtus, and the nearer the procreation takes place to the time of the inoculation of the progenitors.

This highly interesting fact can be undoubtedly proven upon the one side, by those cases in which the eruptive period in several consecutive children of the same series could be observed; partly also from a statistical comparison of a great number of viable syphilitic children, and the time of the outbreak of their manifestly syphilitic symptoms.

It must be stated in advance here, that the prodromic symptoms—decreasing nutrition, pallor, restlessness, even coryza—were disregarded, and attention only given to the time of the first outbreak of the exanthema; because this only furnishes an exactly defined and characteristic period of time, somewhat like the eruption of an acute exanthema; while the other symptoms make their appearance more gradually, and without a sharply characterized beginning.

According to our experience then, the eruption of the first general exanthema takes place exclusively within the first three months. This is a purely clinical fact, but eruptions several weeks, or even months, *after* this termination are, *a priori*, not to be excluded; for, as there can be no question as to a period of incubation in acquired syphilis, and as the deeper causes of the different durations of the latency in hereditary syphilis remain still completely in darkness, so also, just as the syphilitic lesions manifest themselves already within the uterus, and as they may remain latent one, two and three months, a latency of a somewhat longer duration would certainly not be very remarkable. Therefore, in view of the want of every theoretical foundation explanatory of the duration of the latency, the naked facts are alone to be considered; and, in accordance with them, the outbreak of the first symptoms is, at all events, extraordinarily rare *after* the lapse of the third month. In my 124 cases which I observed, either immediately at the time of the first eruption or shortly thereafter, there was not one in which the beginning of the eruption took place after the third month; and the opinions of most writers, who all, indeed, regard the disease as appearing in the by far larger number before the beginning of the fourth month, but still grant that there are always isolated cases, in which the eruption may be postponed until the later months, or even indeed to the end of the first year, seem to be not sufficiently reliable; for the reason that, in cases of the latter kind, no single observer attempts to exclude the possibility of a probable exanthema preceding the eruption observed by them, and occurring within the first three months of life. Only very recently, Caspary (*l. c.*) published two cases, in which he himself observed the eruption in the fourth and fourth and a half months, and believes himself able to exclude a previous eruption. Both cases were the last members in a succession of syphilitic births. Such observations only prove that a retardation is exceedingly infrequent, but do not alter the rule, that *the outbreak of the first exanthema takes place almost exclusively during the course of the first three months.*

The 124 cases in which the period of the eruption was observed, or could be positively affirmed by me, divide themselves as follows:

Eruption in the 1st week	11			
" " 2d "	21	53 per cent.		
" " 3d and 4th weeks	34			
" " 2d month	40	32	"	
" " 3d "	18	15	"	

In order to ascertain with some definiteness in what relation the period of the eruption stood to the stage of the parental transmission power, I have learned from my table in each one of these cases the position of the child in question in the series of preceding children, and I did so by noting which, in the succession of *living* and viable syphilitic births, the child in question was. As a result, 52 cases at least were discarded, in which the child observed was generally the first-born, in which, consequently, nothing was to be decided as to the relation of the same to the other brothers and sisters; but the remaining 72 furnished the more interesting relations.

Of 10 children in whom the exanthema appeared during the course of the *first week*, 8 were the first living children after previous premature births; 1 was the second, and 1 the third living child.

Of 13 children with eruptions in the *second week*, 5 were the first and 5 the second living children; 2 were the third, and 1 was the fifth living child.

Of 24 children in whom the eruption began in the *second half of the first month*, only 7, consequently scarcely one-third, were the first living syphilitic children; 13 had been preceded by a living child; 3 of them were the third and 1 the fourth living child.

Of 27 children in whom the exanthema appeared first during the course of the *second month*, only 8 were the first living children after previous abortions; 10 were the second, 5 the third, 3 the fourth living children; 1 even was the sixth in the succession of syphilitic children.

Finally, of 12 children who fell ill for the first time in the course of the *third month*, only 2 were the first living children (but in one case 7 years, and in the other case 5 years, had elapsed since the last still-birth), 6 the second, and 4 the third living children after preceding abortions.

It results from this that the early outbreak of the exanthema happen almost exclusively, or, at least, exceedingly often, in those children who are the first capable of life following previous still-births, and in whom the intensity of the inheritance may be regarded as still very great; while the late eruption is only observed in such children as have been preceded, since the last still-birth, either by the births of living children, or a great number of years have elapsed where, consequently, the parental transmission power must have already reached its last stages.

Reversely, we can also say that the nearer the birth of the child is to the time of the premature and still-births, so much earlier, as a rule, must follow the eruption of the exanthema, as can be seen from the following table, which is a synopsis of the figures given above:

	Eruption in the First Week.	Eruption in the Second Week.	Eruption in the third and fourth weeks.	Eruption in the Second Month.	Eruption in the Third Monrh.
First living child....	8	5	7	8	2
Second " " ...	1	5	13	10	6
Third " " ...	1	2	3	5	4
Fourth " " ...	..	..	1	3	..
Fifth " " ...	..	1	..	..	..
Sixth " " ...	..	..	..	1	..

The steady increase in the length of time before the eruption in the births of the same series following consecutively is readily perceptible from the cases (VI, IX, XIX, XXI, XXII, XXIV and XXV) already given. Sometimes, indeed, an equal duration of latency in two consecutive births (Case IV) is observed, but only extremely seldom a period of latency at all shorter in a later birth than in the one preceding it.

The eruption of the exanthema in the third month signifies quite positively in itself a greatly lessened intensity of the heredity, which is also evident from other symptoms. The children (18 in number) in whom the exanthema made its appearance in the third month were almost always well nourished—many even quite unusually so—and weighed in many cases beyond the average. The form of the exanthema was almost exclusively the macular and the papular; vesicular syphilides (pemphigus) was never present, and seldom, if ever, a diffuse syphilitic infiltration of the skin; which two latter are always indicative of more intense disease. Further, the otherwise so frequent specific affection of the epiphyseal cartilages I have observed but once in such a child. The eruption runs a mild course, and is curable in a short time; the relapses are less frequent, nutrition is but seldom compromised by the disease, and the development of the specific syphilitic habitus, which characterizes in so pronounced a manner those children intensely affected, is never observed.

Such a very slightly affected child is followed in most cases by an entirely healthy one; and we may, therefore, say *that the outbreak of the exanthema in the third month of life may be looked upon as a sign of the disappearing syphilitic transmission power in the progenitors.*

XIII. *Relation of the Syphilitic Inheritance to other Constitutional Diseases of the Child.*—In the conclusion of this work, and in connection with the last mentioned results of the disappearing transmission power in

the parents, together with the final birth of healthy children after the extinction of this power, there is still to take into consideration the greatly discussed question: *whether parental syphilis can be transmitted to the child under a different form from the usual appearances of hereditary syphilis.*

Such a connection between the syphilis of the parents and the scrofula, phthisis, and rachitis of the children (it is chiefly only in regard to these diseases) can, however, only be considered in two ways: *either* the disease is found oftener in children who are suffering or have suffered with syphilis hereditaria than in others, and is to a certain extent a sequel of hereditary syphilis; *or*, the children of syphilitic parents to whom the disease for some reason is not transmitted—whether through suppression of the transmission power by a mercurial treatment, or through the spontaneous extinction of the procreative syphilis, or, what is the same, through transition of the parental syphilis into the tertiary stage—become ill in consequence of the dyscrasia of the parents, very often, or always, from one or more of the constitutional diseases spoken of; and therefore the syphilis of the parents is no longer transmitted to the children as syphilis, but as scrofula, phthisis or rachitis.

Inasmuch as I at once without hesitation declare that I hold as possible a favoring of these constitutional anomalies by an existing or a past congenital syphilis, but that I regard an inheritance of parental syphilis, in the form of one of the diseases mentioned, or of any other disease, without signs of hereditary syphilis, as entirely unproven, and its acceptance unjustifiable, I will proceed to the discussion of these several diseases.

Scrofula is mentioned most frequently as a consequence of parental syphilis. Such a metamorphosis of syphilis in the next generation was already accepted in the beginning of the present century by Mahon, Bertin, Hufeland and others. Ricord conceded this transmutation and stated in his "Letters upon Syphilis:" The progeny of tertiary syphilitics are not syphilitic, but scrofulous and rachitic. Maisonneuve and Montanier (*l. c.*) even described a peculiar form of scrofula, the scrofuloid, which appeared only in the children of syphilitics, and to be certainly differentiated from scrofula. Rosen (*l. c.*) also believes in a similar form of heredity.

The result of my observations in this direction is to the effect that, in children who have survived inherited syphilis, there appear occasionally enlargements and cheesy metamorphoses of the glands, just as in non-syphilitic children, possibly even oftener than in the latter, in which cases it must then be partly attributed to the general mal-nutrition resulting from the past severe disease, partly to the glandular enlargement arising

purely from the syphilis, which may be the exciting cause of the later degeneration. But just here it must be observed that in syphilis hereditaria the lymphatic glands are by far less frequently affected than in the acquired disease.

Further, in individuals who have outlived hereditary syphilis, it is well known that, sooner or later, even at a mature age, very obstinate forms of tertiary syphilis still manifest themselves; which may readily lead to a confounding of the same with scrofulous affections of the bones and mucous membranes, lupus vulgaris, etc., and which will be extensively and thoroughly discussed in the chapter upon late forms of hereditary syphilis. Such tertiary forms, however, only present themselves in persons who in youth have suffered in a more or less pronounced and severe manner from the usual forms of hereditary syphilis; they are, then, parts of the inherited affection. But those children to whom the syphilis of the parents for some reason is not transmitted, who consequently have not given evidences of inherited syphilis within the first months of life, may, according to my experience, remain entirely healthy; and in fact, in ten children observed by me, who were procreated after the extinction of the parental transmission power and who remain free from syphilis, I have thus far been unable to notice any scrofula, although several have already reached the age of four and five years, and have always been under observation. They are almost all stout and healthy, although the parents of several suffer from undoubted forms of tertiary syphilis; and there is no evidence that they carry within them the germ of scrofula. But, even if such children should become ill with scrofula, I would have no foundation for regarding the same as a metamorphosed syphilis; because it is unconceivable why children whose parents have at one time had syphilis could not suffer from scrofula as well as others. Even if we acknowledge that the change in the parental constitution occasioned by the past syphilis could favor the origin of scrofula in the children, it would prove by no means that syphilis in the parents could be transmitted to the children as scrofula.

The condition in relation to *phthisis* is very nearly the same as in scrofula. Its relation to syphilis is no other than that it attacks an organism weakened by syphilis, much more easily than a strong one. It is, however, entirely unwarrantable to trace the phthisical process direct from syphilis, as is done, for instance, by Rosen. When, in one of his cases (*l. c.*, Case XL), a syphilitic father who dies later, from phthisis, procreates a daughter who in childhood is affected with syphilis hereditaria and dies from phthisis at the age of fifteen, we only have here the direct inheritance of phthisis, just as the syphilis.

Rachitis, also, is never to be regarded as a direct result of parental syphilis. Yet I must grant here, in contradistinction to the two constitutional anomalies just mentioned, that rachitis not only occurs in congenitally syphilitic children, just as in others, but that in fact it appears in the former disproportionately oftener, and on an average also earlier and more violently, than in non-syphilitic children. In almost all the children with congenital syphilis, which I had the opportunity of observing during a long period, very pronounced rachitis developed itself, evidenced especially in a striking manner upon the cranium, but also as regards the teeth (tardy development and premature decay), the extremities, the thorax, etc. I can even go so far as to declare that the absence of rachitis in hereditarily syphilitic children in my cases was a rarity, and that I know at the most of but three or four children, previously syphilitic in whom it did not appear. Although I withold the closer details for the chapter on diseases of the bones, I must nevertheless mention here that I am inclined to associate the so frequent occurrence of rachitis with the syphilitic process, in so far as that, as we shall see, hereditary syphilis, in a great number of cases, occasions an entirely specific affection, just in that portion of the epiphyseal cartilages in which the growth in length of the long bones commences. Although I am far from identifying this process with the rachitic, nevertheless, from my numerous examinations of syphilitic, rachitic and healthy bones in the fœtus and new-born children, I have arrived at the conclusion that both processes *in their first stages* are anatomically and microscopically not to be differentiated; and that they diverge only in the later and severer stages, in which syphilis specially leads to a destructive process which has no analogy in rachitis. But the great similarity of the objective conditions found in the first stages would naturally lead us to suppose that here, possibly, two kinds of causes produce the same effect, at least in the first stages of the developing disease processes. As we now know that syphilis is sufficient to bring about, especially in those tissues in which the rachitic disease has its seat, a process which at least has a very great resemblance to the rachitic, proliferation of the cartilage cells, inflammatory changes in the perichondrium and periosteum, with growth of osteophytes in both the latter, etc., we can scarcely throw aside entirely the supposition that this specific process in these tissues may be, at the same time, the exciting cause of the development of the actual rachitic process. This would correspond also very well with the remarkable actual frequency of rachitis in hereditarily syphilitic individuals.

But, even if such a connection should exist, rachitis here also, in many cases, would be merely a sequel of hereditary syphilis, but in no way a disease by inheritance of a to a certain extent metamorphosed sy-

philis of the progenitors. In fact, there is no foundation whatever to support the view that in children of syphilitic parents who have not the disease through any of the causes already given, who consequently do not suffer or have not suffered from the usual symptoms of hereditary syphilis, rachitis develops oftener, or in any other manner, than in the children of non-syphilitic parents. In my ten cases of healthy children, born of syphilitic or formerly syphilitic parents, I have not once been able incidentally to prove a noteworthy degree of rachitis.

The remaining views belonging here as to other diseases, which appear earlier or later in the children, directly as a consequence of parental syphilis, without, however, the true inheritance of syphilis as such, for instance nervousness, sleeplessness, hydrocephalus, chorea, teleangiectasis (Baerensprung), etc., I only mention on account of completeness and their singularity. They do not require special consideration.

Accordingly, the summa of this discussion is *that the transmission of syphilis from the parents to the child, through the agency of the semen or ovum, always brings about the highly characteristic and unmistakable appearances of inherited syphilis, and this alone is occasioned by it.*

The searching and accurate description of these appearances is the object which I next have in view.

SELECTIONS.

CYSTITIS IN THE MALE.

A Lecture

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The cause of catarrh of the bladder lies in the presence of some obstacle to the egress of the urine, such as one or more strictures; an enlarged prostate gland; a calculus; hypertrophy or sacculation of the bladder; carcinomatous or sarcomatous tumor, and paralysis of the bladder; this last occurring as a result of fracture or dislocation of the vertebræ, or being dependent upon pneumonia, meningitis, or myelitis. The symptoms of cystorrhœa are an increasing discharge of muco-purulent matter, difficulty in micturition, pain in associate parts, and general breaking down of health. The secretion of cystitis is easy to recognize, rendering the diagnosis plain if a specimen of the urine can be obtained. There is usually in such urine a very copious sediment. Another point of diagnosis may be reached by watching how and when the discharge of

viscid, ropy, fetid ammoniacal fluid comes away from the bladder, not at all times, but only when the bladder is emptied. The total amount of this discharge in the course of twenty-four hours varies. Early in the disease there may not be more than one fluid-drachm of it in a day, whereas later in the progress of the attack one-half of the whole quantity of fluid passed may be this muco-purulent matter. In one case which came under my notice, as much as sixteen pounds or pints of it were expelled in thirty-two hours. This discharge is not mucus, but pus—pus acted on by ammonia, which destroys all the pus corpuscles. This ammoniacal pus will, as we have heard from this man, sometimes string out in a mass at the close of micturition. If we examine the supernatant fluid of this discharge, it will be found to give the reaction of albumen, and to contain the crystals of the triple ammonio-magnesian phosphates.

The bladder of a patient with cystitis is never entirely empty. The urea which remains behind decomposes into the carbonate of ammonium, and this intensifies the inflammation. The character of the urine is but very little changed at first, but in later stages, as I have just said, it becomes turbid, muddy and decomposed, and contains pus and epithelial cells, the triple phosphatic crystals, bacteria and vibriones. This being so, the first indication, of course, is to keep the bladder clean, and not to change the character of the urine. As regards the quantity of pus passed, there is not very much in this case, not more than one-eighth of the total quantity of urine, calculating with Professor Tyson, of the University of Pennsylvania, that the average daily secretion of urine is fifty ounces. Of course this daily total varies widely, according to the state of the weather, etc., etc. In warm weather a large part of it passes off by the skin; in cold weather, as there is little or no diaphoresis, the diuresis is increased in amount. So, too, with regard to the use of certain articles of food. Coffee is a powerful diuretic. This man passes six and one-fourth ounces of pus in twenty-four hours. This naturally causes a considerable drain on the system. The pain in passing water, usually referred to the last two inches of the penis, in reality extends along the whole length of the urethra. This man tells us that he also has pain in the perineum and ano-rectal region, and occasionally in the thigh and groins. Most people have a very indefinite idea of the exact location of a pain. Thus a patient with lumbago will often come to you complaining of pain in the kidneys. So, too, a man with functional disorders of the stomach refers his subjective sensations to the heart. In this case pressure over the pubes, after the bladder has been emptied, causes pain. As a general rule pain at the end of the penis denotes inflammation at the neck of the bladder, and pain over the pubic bone denotes inflammation of the whole of the bladder.

This patient does not suffer from any constitutional disturbance. His appetite is good, and his bowels are moved regularly every day. The only thing that he complains of is that his rest is broken by having to rise so often and urinate during the night. In most cases of cystitis we find the patient utterly broken down and emaciated. I said that the disease was primarily due to an obstruction to the natural flow of the urine. This obstruction in the young is usually a stricture; in the old it is generally due to paralysis, or, more commonly still, to enlargement of the prostate gland. There are also, as I have already shown, other morbid conditions of the parts, causing obstruction to the flow of urine. The intense desire to make water is due to the inflammation of the mucous membrane of the bladder, which may become so swollen and hypertrophied that the organ will not hold more than one ounce and a half of urine. If the bladder of a patient who has died in the early stages of cystitis be opened, its epithelium will be found to be hypertrophied, and to have become the seat of inflammatory deposits. During the course of the disease the bladder undergoes certain changes—just such changes as would occur in any muscle if it were exercised more than its fellow. The blood would tend to it and it would become hypertrophied and immensely developed. So in stenosis of the valves of the heart causing enlargement of its muscle. The tendency of the blood to the bladder causes an unusual development of its muscular walls in particular. In some fatal cases of cystitis, brought on by stricture, I found the walls of the bladder fully three-quarters of an inch in thickness. Of course, *pari passu* with this concentric hypertrophy, the cavity of the bladder diminishes in size. In eccentric hypertrophy of the walls of the bladder, the cavity on the other hand increases in size. This man, no doubt, has eccentric hypertrophy, joined with increased frequency of micturition, spasm and tenesmus. He may have enlargement of the involuntary, internal columniform fibres of the bladder. Where these muscles are enlarged there is a sort of hydraulic pressure exerted, which drives the mucous membrane out between the columniform fibre, thus forming a number of small cysts, hernial protrusions from the bladder, as it were, which contain urine. Sometimes there are as many as thirty or forty of these cysts, which may contain uric acid calculi. Indeed, one of these cysts may be as large as the bladder itself.

Here is a specimen taken from an old man who died with enlarged prostate, in which you can see the cysts which have formed between the columniform fibres. Here is a specimen of eccentric hypertrophy, in which the size of the bladder is enormously increased. This man is forty-five years of age, and probably has no enlargement of the prostate, for this condition does not usually occur until after the fifty-fifth year.

After that age one person in every fifty shows signs of that condition. In diagnosticating enlargement of the prostate by means of an instrument, a peculiar form of bougie is necessary in order to get past the obstruction. In very many cases the presence of an enlarged prostate may be determined by means of a finger in the rectum. In health the prostatic gland is about the size of a horse-chestnut. This patient tells me that he had gonorrhœa as many as a dozen times when he was young. This history illustrates a very peculiar fact, namely, a gonorrhœal diathesis, one man has an attack of gonorrhœa every time he cohabits with a certain infected woman; another man has connection with her with entire impunity—the simple fact being that one man has the gonorrhœal diathesis and the other has not. The last attack which our patient had was fifteen years ago. Upon questioning him closely with regard to that period he tells me that very often he woke up in the morning and found that the lips of the meatus urinarius had stuck together. Moreover he affirms that since the last attack he has noticed a very decided difference in the size of the column of urine projected, and can only get a number 13 bougie into the urethra. From the size of the meatus it should certainly admit a number 30. Furthermore, the man says that he cannot project the stream properly. He always has to *milk* the last few drops away as it were. This is due to the loss of function on the part of the urethral muscles. Sometimes, he says, a little streak of blood may be seen in the urine. Upon introducing a bulbous bougie into the urethra I meet with the first obstruction about three-quarters of an inch beyond the meatus; another I find an inch and a half within the meatus. There is great sensitiveness of the urethra. Far back in its calibre I strike tight strictures which I can not get through. In this case the cystitis is very plainly dependent upon stricture of the urethra. I do not care to examine the man any further at present, for I might give him an attack of urethral fever. He says that he was discharged from the army on account of a disease of the bladder—polyuria he thinks the surgeon said. Later a New York doctor told him that there was a considerable quantity of albumen in his urine. In his present condition it is impossible to determine whether or not the man has disease of the kidneys. The albumen in his urine may be due to kidney trouble, might be imagined to show the presence of Bright's disease in a chronic form, and yet it may be simply a product of the inflamed condition of the bladder.

In undertaking the care of a case of stricture one's treament must of course be modified by the condition of the urinary tract. This, then, brings us to a consideration of the treatment of cystorrhœa. The first indication of course, is to remove the exciting cause. I shall therefore enlarge the stricture by gradual dilatation. I shall try on some future

occasion to wash out his bladder thoroughly, and to get a dozen drops of urine uncontaminated by the vesical discharge. If this urine contains albumen we shall know at once that the kidneys are diseased. If the kidneys are healthy the case can be cured I think. The first indication in treatment as I tell you, is to remove the exciting cause. The urethra is very sensitive, while this is the case it will be hard to cure. We must try to keep down the inflammation. If there be acute pain and spasm, blood must be taken from the perineum by means of leeches. The patient must be kept in bed, and hot formentations applied over the pubes. At the same time he should take demulcent drinks, with a little hyoscyamus —one drachm of hyoscyamus to each glass of the drink. If the pain is violent, morphia must be given by the mouth or rectum. The following prescription is a good one:

R.	Pulv. Opii. - - - - -	grs. xii.
	Camphoræ - - - -	grs. xxx.
	Ex. Belladon - - - - -	grs. iij.
	Cocao - - - - -	q. s.

M. et in suppos. No. VI divide; S. One each night before retiring.

The diet should be bland and unstimulating. After the symptoms have abated somewhat, balsam of copaiba should be given three times in the course of the twenty four hours in capsule, or rubbed up in an emulsion. To this opium may be added to prevent flatulence and griping. In some cases turpentine in capsule may do good, other remedies are buchu, decoction of trailing arbutus, or uva ursi, with hops, highly recommended by Sir Henry Thompson—uvæ ursi f dr. iss., lupuline oz. i., aquæ Oij. This mixture should be allowed to simmer for two hours; then enough water poured in to bring the quantity of the mixture up to two quarts; then two grains of morphia and two drachms of the bicarbonate of sodium added. The dose of this mixture is a wine-glassful. In some cases benzoic acid will be found very useful. The dose, beginning with five grains, should be gradually pushed up to thirty grains, and finally as much as one drachm may be taken thrice daily. Paregoric has this acid as one of its constituents. Benzoic acid has both a soothing and a chemical action upon the parts. This latter action consists in its influence upon the carbonate of ammonium which it neutralizes, and with which it forms a soluble compound, and so prevents the formation of the crystals of triple phosphate. A prescription which I have often used, and from which I have derived the most excellent results, is the following:

R.	Copaibæ Balsami - - -	drs. iv.
	Acid Benzoici - - - -	scruples iv.
	Gumma Arabici - - -	drs. ij.
	Sacchari - - - - -	drs. ij.
	Gaultheriæ olei - - -	gtt. xx.
	Aquæ Camphoræ - -	q. s. ad f. ozs. viij.

M. S. A teaspoonful every two hours.

So much for the general treatment. The local treatment of cystitis is the most important. Cystitis can never be cured so long as a stricture of the urethra remains. Our first aim, consequently, in all cases must be to remove the stricture. As regards the treatment of the urine, it must be borne in mind that the ammonium in the urine keeps the bladder in a constant state of irritation. The first thing to be done, therefore, after dilating the stricture enough to get an instrument past it, is to wash out the bladder. The best way, perhaps, of doing this is to procure a gum-elastic bag holding about four ounces, and to have a basin of water at 98° F., ready. Then after drawing the urine with a flexible catheter whose end is smooth, allow the catheter to remain *in situ*, and the bladder may be washed out by simply connecting the mouth of the bag with the catheter. The warm water thus injected should be retained as long as possible, and then drawn off, and the operation repeated. If you do not happen to have this bag and a catheter on hand get a bit of rubber tubing and a funnel; then pour the warm water into the funnel, and after it has come out through the tubing replace the funnel and repeat the operation until the water comes out clear. If the urine is fetid, one grain of the permanganate of potassium may be added to each ounce of warm water; or you may add a small part of carbolic acid. After the water has come out clear, if it is desired to make an impression upon the mucous membrane of the bladder, a solution of borax (fifteen grains to the finid ounce of water) may be injected; or still better, a twenty grain solution of the nitrate of silver. If this solution does not cause too much smarting it may be allowed to remain ten seconds. The patient should rest in bed during this treatment, and be placed upon a very bland diet.—*New York Medical Gazette.*

SIMPLE MITRAL STENOSIS.

A Lecture

By M. DREYFUS-BRISAC,

PHYSICIAN TO THE PARIS HOSPITALS.

GENTLEMEN:—The discussions which occupied the attention of the scientific world forty years since, regarding the symptomatology of mitral stenosis, and the great divergency of opinions which then reigned concerning its physical signs, are no longer remembered to-day. There was no longer any foundation for this controversy, from the moment it was admitted that simple, uncomplicated mitral stenosis is a rare lesion, being associated almost always with more or less marked insufficiency. As, on

the other hand, the distinction between stenosis and insufficiency seems to be but of minor importance in the physiological pathology of the case, since the two lesions follow identical laws in their evolution, practitioners, in the end, no longer attempted absolute precision in a diagnosis of purely anatomical interest, and fell back on the comprehensive and very convenient term of mitral disease or lesion, which was considered sufficiently precise for all clinical purposes.

This opinion certainly corresponds to reality in the great majority of cases, and mitral lesion is the habitual type of "chronic heart diseaase." Have we not, however, gone too far, in almost denying a place among diseases of the heart to simple stenosis, as has been done in theory, particularly by foreign authors, and in practice by most practitioners?

There has been of late years some tendency toward reaction, commenced by M. Durosiez, in his interesting memoir in the *Archives Generales de Medecine* (1877) and continued in the thesis of M. Marshall (1879) and of Marien (1880) both elaborated in Prof. Hardy's service, and though succinct, bringing forward certain clinical particularities which merit careful consideration.

Besides the common double lesion, stenosis with insufficiency, there seems to exist a variety of mitral stenosis which merits special description, particularly as regards its etiology and course. It is true that the elements on which to found such study are as yet, in great part, wanting; but it is none the less interesting to call your attention to certain unexpected results which are in contradiction with generally received opinions.

The etiology of this affection has received most attention. Durosiez had already shown that simple mitral stenosis is much more frequent in females (46 cases in women to 15 in men); this particularity has been confirmed by all the statistics collected in the thesis of M. Marshall, written under the direction of M. Landouzy.

In 100 cases observed by M. Landouzy, 85 were in women and 15 in men; Duckworth, in the St. Bartholomew Hospital Reports, Vol. XIII, says he met with 78 cases in women to 21 in men. The personal observations of M. Marshall show 76 per cent. of the cases as occurring in women. Finally, collecting together all the statistics, we find a percentage of 70 for women to 30 for men.

Although all these researches have not been undertaken with this special object in view, and several authors may have confounded the double mitral leison with simple stenosis, it is still plainly evident, from this notable percentage in a large number of cases, that the latter affection is much more frequent among women.

It is true, that many practitioners had already remarked a predominance of the mitral over aortic lesions in women; but no author had attributed to sex so marked an influence in the development of these alterations.

It may be said in general, that simple, uncomplicated stenosis is an affection peculiar to young women, for it forms no exception to the well-known law that mitral lesions belong particularly to the first period of life.

Very often it dates from childhood; unfortunately precise knowledge on this point is wanting; because, evidently, stenosis is more liable to pass unrecognized in young subjects than the other organic diseases of the heart, and it is thus rendered difficult to establish its period of development.

The point the most obscure in the etiology is concerning the influence of rheumatism, and in general, of maladies, haveing a tendency to affect the endocardium, on the production of mitral stenosis.

While Duckworth found rhumatic antecedents in 60 per cent. and Durosiez in 50 per cent. of his cases, other authors, and particularly Hilton Fagge (Reynolds' System of Medicine,) Landouzy and Marshall, admit, with Grisolle, that mitral stenosis is oftenest developed slowly and insidiously, without any possibility of demonstrating at any period the existence of rheumatism or arthritic manifestations.

We should incline willingly to this conclusion, but with great reserve, for nothing is more frequent than slight and incomplete manifestations of rheumatism in childhood, from simple chorea to torticollis or pulmonary congestion.

On the other hand, it is evident that the infectious diseases, the eruptive fevers particularly, may have some part in the etiology of mitral endocarditis.

Such a lesion may remain for years latent, being slowly organized, and yet have its source in one of the maladies common during childhood.

But extremely little is known concerning the influence of the different fevers, particularly of typhoid fever, in producing heart troubles.

It is at any rate certain that the primary causation of pathogenesis of mitral stenosis remains obscure; for in what manner can be explained the incontestable predisposition of females to this affection? We naturally seek the solution of this problem in the anatomical and physiological conditions special to women, and are led to incriminate either pregnancy or menstruation.

If it be true, as has been shown by Durosiez, that the morbid phenomena are oftenest observed after pregnancy, there is no proof that this

condition has had any part in producing the cardiac alteration; ordinarily pregnancy only accentuates a lesion which up to that period has remained latent.

As regards the explanation put forward by M. Marshall, it does not seem entirely without foundation.

"The predominance of mitral stenosis in women, she says, may be due to the comparative narrowness of the left ventricular orifice and to the composition of the blood, which is, in all probability, peculiar during the period of sexual activity."

In this theory, the assimilation of the blood of females, during the period of genital activity, to that of rheumatic patients, on account of its deficient alkalitity, must be regarded as more than hypothetical.

The anatomical consideration invoked by M. Marshall has greater weight. Bizot has, in effect, demonstrated that the mitral orifice, under normal conditions, is narrower in women than in men; whence exaggeration of blood pressure at this point, which consequently becomes a place of election for inflammatory and degenerated alterations.

This peculiarity is the more interesting, as stenosis of the aorta, close to its cardiac origin, is also more frequent in females, a fact on which Virchow founded his theory of schlorosis.

If this last affection is, at least, in part, of congenital origin, yet remaining latent until the period of puberty, why should not the same thing happen for this variety of stenosis, which has many points of resemblance with schlorosis?

It is generally admitted that mitral stenosis cannot long pass unperceived; that its existence is early shown by functional disorders, which draw attention to the condition of the heart, and finally that it rapidly gives rise to asystolic manifestations. Death, according to generally received opinions, supervenes in a few years, six or seven at the furthest.

Is not this picture more sombre than realitity, particularly as regards uncomplicated stenosis? and, on the other hand, is it always possible to recognize the organic alteration with such facility?

Many clinical observations show that the lesion may remain many years latent or give rise to but slight and fugacious derangements, such as slight dyspnœa on exertion, palpitations, epistaxis (Durosiez), all phenomena common among young, healthy girls at the period of puberty.

Often, it is true, the signs of pulmonary trouble are more marked; there is a tendency to bronchorrea, with slight but repeated hæmoptysis, which call attention to the state of the heart. But even under these conditions how frequent are the errors of diagnosis.

At the debut of the sexual period in young girls, the menstrual flow disappears entirely for several months, or is frequently obstructed; the

patient becomes pale, takes on a chlorotic appearance, is easily put out of breath, catches cold at the slightest change in the weather, and often complains of abundant expectoration; when, then, in connection with all these symptoms, hæmoptysis appears, the attending physician necessarily thinks it is the debut of tuberculosis. Auscultation of the lungs reveals here and there foci of fine rales, while physical examination of the heart remains almost negative, the signs observed being so slight that they are considered to be simply functional, and due to the neuropathic condition of the patient.

Thus is constituted, to use the expressson of M. Germain See, a latent cardiac affection, of either dyspnœic or hæmoptoic character, and the young girl, who, for that matter, presents hardly any of the general symptoms of heart disease, is for years treated for tuberculosis.

For, notwithstanding all the entirely theoretic considerations of pathological physiology, which deny any durable compensatory action to the left auricle, this latent period may last a long time if no perturbing medication be instituted.

But this state of equilibrium, necessarily unstable, will be broken, and things take on an entirely different appearance, from the moment the heart is accidently overworked.

Such is the case for men of dissipated habits or exercising a fatiguing profession; and thus may undoubtedly be explained the greater gravity and the more rapid progress of the disease in men.

Such is particularly the influence of pregnancy; many of the cardiac symptoms observed at this period, and generally attributed to functional hypertrophy of the heart, are in reality due to the existence of this form of mitral stenosis, which had remained almost or quite latent up to the period of pregnancy.

From the moment the heart is, as it were, forced, all the general symptoms of mitral diseases are successively produced; it is, however, oftenest by intense dyspnœic manifestations, or very abundant hæmoptysis, that the asystolic period commences.

Very gradually the heart dilates, secondary insufficiency is developed, and from that period the double mitral lesion is constituted, with its usual clinical signs. The physician who then sees the patient for the first time can but affirm the existance of mitral disease, without suspecting what has been the course of the morbid process.

This explains how this variety of mitral stenosis has so often passed unrecognized, and why its nosography is as yet imperfectly elaborated. —*Med. and Surg. Reporter.*

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

(ABSTRACT.)

Stated Meeting, April 6th, 1882.

The President, EDWARD L. DUER, M. D., in the Chair.

REMOVAL OF THE UTERUS FOR FIBROID TUMOR.—DEATH.—AUTOPSY.

Dr. E. E. Montgomery reported the following case which had been under his care at the Philadelphia Hospital:

Sarah B. (colored), æt. 46, widow, native of New Jersey, of temperate habits, has been an inmate of the Philadelphia Hospital for nearly three years. She entered the gynecological ward about the last of February, soliciting the removal of a large abdominal tumor.

The establishment of her menstrual function was attended by severe hemorrhage, but soon became regular. The menses ceased at one time for five years. She has not menstruated for two years. She was never pregnant.

The growth of the tumor, which began eighteen years ago, she attributed to a kick in the abdomen from her husband. The tumor soon acquired great size, filling up the abdomen and pressing against the diaphragm, causing great distress.

She has been treated by means of hypodermic injections of ergotin and later by the earth treatment. The latter was followed by a slight reduction, possibly due to the rest in bed. When she came under my care, the abdomen was more prominent than if at full term of pregnancy. Owing to the woman's emaciation and the loss of muscular power in the walls of the abdomen, the mass had settled down into the lower part of the cavity, encroaching but little upon the portion above the umbilicus. A fluctuating surface, evidently the bladder, covered the whole of the lower face of the mass. The tumor was regular in outline, and about equal in size on either side the median line. At the upper part of the right side could be felt a smaller, loosely-connected mass, between which and the tumor the percussion was resonant.

The abdominal walls were freely movable over the tumor, but the latter could be raised or moved from side to side only to a limited extent. Examination per vaginam disclosed the whole uterus involved in the

mass, which rested upon the pelvis. The sound could be passed five inches into the uterine canal along the posterior border of the tumor. The posterior lip was thin.

We evidently had a fibroid tumor, which had originated in the anterior wall of the uterus, and had drawn the bladder up with it as it grew.

In view of the large size of the mass, the anxiety of the patient for its removal and her general condition, it was decided, after a staff consultation, to make an exploratory incision, and if the adhesions were not extensive above and posteriorly, proceed to the complete removal of the tumor and uterus.

The patient was kept quiet in bed one week, and sulphate of quinia, three grains, tincture of the chloride of iron, thirty drops, were given three times a day. The bowels were regulated by the use of compound licorice powder. The urine, examined by one of the resident physicians, was found alkaline, and contained no albumen.

Operation.—March 17th, assisted by my colleagues, Drs. Duer, Warder, Parish, Musser and Hatfield, I proceeded to perform the operation under antiseptic precautions, using thymol spray. An incision three inches long was first made down to the tumor, and the hand introduced. No adhesions were found above and but one band posteriorly. The bladder was spread out over and closely adherent to the tumor anteriorly. The opening was now extended to the symphsis below and the umbilicus above, and the tumor with some difficulty lifted through. The peritoneal covering of the tumor was burnt through with Paquelin's thermo-cautery, and the bladder dissected off. The capsule was then raised on either side, permitting ligatures to be passed beneath the broad ligaments. The lower portion of the cervix was then tied in two sections, both surrounded by ligatures and the mass removed. Although the hemorrhage had not been excesssve, the condition of our patient now became critical. The pulse was very feeble, indeed scarcely perceptible; respiration infrequent and sighing. It was only through the persistent care of Dr. Parish in the use of hypodermics of whisky and ammonia and hot-water applications over the chest that she survived until the wound could be closed. She was blaced in bed and surrounded by hot bottles; ergot and digitalis were given hypodermically, and whisky by the mouth and rectum; but without counteracting the effect sof shock. She died two and one-half hours after the operation.

At the autopsy, a couple of ounces of bloody serum were found in Douglas' cul-de-sac. The kidneys were small, soft, flabby, and, upon being opened, were found dilated into sacs; the structure of them being largely destroyed. One was full of pus. The ureters were greatly dilated. They were not injured in the dissection for the removal of the mass. The

heart was contracted, pale and empty of blood. The ligatures had been applied around the cervix one and a half inches above the os.

The tumor was a solid mass weighing sixteen pounds, its longest diameter laterally, quite regular in outline, presenting from the right upper surface a smaller mass with an elongated pedicle.

Aside from the necessity of placing such cases upon record to obtain correct statistics, it is of special importance as an illustration of the advantage to be derived from a careful study of the condition of the renal organs previous to the operation, and the increased gravity given by any symptoms that would cause us to suspect a renal lesion. We made no microscopical examination of the urine, so the presence of pus escaped notice, though its presence should have been suspected from the alkalinity of the urine.

Dr. B. F. Baer considered the examination of the urine a very important point, as albuminous or purulent urine is always a sign of danger.

Dr. H. Beates remarked that in testing for albumen in urine by means of Hallen's test, he had noticed a singular fact in some instances where the urine was alkaline or but very faintly acid. If the acid was added to the urine before boiling, no precipitation occurred, but by reversing the test, boiling first and adding the acid afterward, the presence of albumen was shown.

Dr. Montgomery, in closing the discussion, remarked that, although at the autopsy one kidney was found full of pus, none had ever been observed in the urine. This was perhaps due to occlusion of the ureter from pressure by the tumor. If pus were present in small quantity, it might be considered to arise from systitis from pressure on the bladder. But urine repeatedly found to be alkaline. when no alkalies have been administered, would indicate the presence of pus, although none were found.—*Monthly Supplement to Amer. Jour. of Obstetrics.*

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

(ABSTRACT.)

Wednesday, Feb. 1st, 1882.

DR. MATTHEWS DUNCAN, in the Chair.

DOUBTFUL CASE OF DOUBLE VAGINA.

Dr. Galabin showed a microscopic section of the septum dividing the vagina from a peculiar abnormal passage in a girl aged seventeen. She was admitted into a surgical ward in Guy's Hospital for what was thought to be a cystic dilatation of the base of the bladder or urethra

protruding at the vulva. Dr. Galabin recommended it to be cut away, and the edges brought together, but his surgical colleague declined to operate, fearing a permanent fistula. Dr. Galabin subsequently operated himself, but on cutting across the swelling found that he had not opened the bladder, but the lower extremity of a cylindrical passage, like a second vagina, but lying in front of the left half of the main vagina, and ending just to the left of the os uteri in a small opening, through which a probe could be passed half an inch only.

Dr. Routh asked if the narrow part of the canal had been explored, and what was the condition of the uterus. He thought a second vagina might lie in front of the main passage, instead of at the side.

Dr. Carter had on several occasions met with cysts in the anterior vaginal wall, though none so extended as that described by Dr. Galabin. The cysts were opened, and contained a glairy mucoid fluid.

Dr. Galabin said that the uterus could not be detected as abnormal on bimanual examination. He did not think the passage could have been a cyst, for it was cylindrical, and not globular, and the contained fluid was not mucoid.

RETENTION OF MENSTRUAL FLUID IN ONE-HALF OF A DOUBLE UTERUS.

By Dr. Galabin.—The patient, aged fifteen, was brought by her mother for consultation for symptoms exactly resembling those of ordinary severe spasmodic dysmenorrhea, and no swelling or tumor had been noticed. Menstruation was fairly regular, and rather profuse. The pain was felt chiefly during the flow, was intermittent, agonizing in severity, and led to retchings and hysterical manifestations. On examination, a firm globular swelling, without any fluctuation or elasticity, about as large as the uterus at three and a half months pregnancy, was felt through the anterior vaginal wall. The os was difficult to discover, and was displaced backward and flattened antero-posteriorly. The patient was so hyperesthetic that it was impossible to attempt to use the sound. The author rejected the hypothesis of fibroid tumor, on account of the patient's youth and the commencement of the symptoms with puberty, and felt sure that menstrual fluid would not accumulate to any amount in the uterus if there were any exit whatever through the cervix. He therefore diagnosed retention in one-half of a double uterus. It was agreed with Dr. Stirling, of Grange Road, under whose care the patient had been, that an anesthetic should be given, and the swelling evacuated if the diagnosis appeared to be confirmed on use of the sound. Under anesthesia, it was found that the sound passed easily to the normal length, going rather toward the right side, and the os appeared to be displaced a little to the right. The swelling was then punctured, and the usual treacly fluid, seen in cases of retained menses, began to escape. The opening was enlarged with scalpel

and director, till it easily admitted the finger, and about ten ounces of fluid escaped. No injection was used on the spot, but it was intended to commence antiseptic injections after allowing a few hours for complete escape of the fluid. The extreme hyperesthesia and hysterical resistance of the patient, however, made it impossible to do more than syringe the vagina. Discharge of sanguineous fluid was free up to the third day, but it then almost stopped, and what there was became offensive. Next day febrile symptoms set in, temperature rising to 104.6, pulse to 140. The patient's friends refused to allow an anesthetic to be given to wash out the uterus until the seventh day, when the author saw her again. There was then still high fever, but no sign of peritonitis. An anesthetic having been given, the opening into the left half of the uterus was again enlarged, and the cavity washed out with solution of absolute phenol one in forty. Considerable improvement followed up to the twelfth day, although it still proved to be impossible to do more than syringe the vagina, and little doubt was felt about the patient's recovery. On the twelfth day, she was suddenly attacked with violent pain in the abdomen and collapse, and died in about twelve hours. The author thought that the symptoms pointed to rupture either of the Fallopian tube, or of some abscess in the neighborhood.

Dr. Graily Hewitt's experience had led him to the conclusion that it was safer, in performing the operation for retained menses, to make a small opening, and allow gradual escape of fluid and gradual contraction of the walls of the cavity, which were often weak and thin. If allowed to discharge itself too quickly, a suction might afterwards be exercised and septic material drawn in.

Dr. Gervis thought that Dr. Galabin had himself pointed out what would have been the most useful addition to the conduct of the case—the washing out with antiseptic fluid of the uterine cavity. He agreed with Dr. Hewitt as to the importance of moderately slow evacuations, but with antiseptic precautions, thinking that the danger was less through any uterine suction than through decomposition of unremoved fluid.

Dr. Wynn Williams differed from Dr. Graily Hewitt in that he made a very free opening to get rid of all the menstrual fluid at once. He would have syringed out the uterus with a solution of iodine, which he believed the safest and best antiseptic. He would also have avoided making a second incision, any septic conditions being present.

Dr. Champneys had seen a case of retained menses in one-half of a double uterus, under Dr. Winckel, of Dresden. In this, slow evacuation did not prevent a fatal result, which was caused by the retraction of the uterus from an adhesion, which tore a hole in the thin uterine wall. Death resulted from septic peritonitis.

Dr. Cleveland was surprised at the fear expressed as to the use of carbolic acid injections. In chronic inflammations of the bladder, he had used injections of absolute phenol, one to fifty or sixty of water, with excellent results.

Dr. Carter agreed with what had been said as to the dangerous results which had at times followed the injection of a solution of carbolic acid into the uterus. He related the case of a patient who was for some time in a very critical state after washing out the uterus the third day after a miscarriage with a solution of the strength of one in eighty.

Dr. Malins thought there was some doubt about Dr. Galabin's diagnosis in the absence of an autopsy. The symptoms and physical state did not seem inconsistent either with an anterior hematocele or thrombus in the cellular tissue. He had met with similar cases, in which the difficulty in insuring drainage and disinfection had been overcome by using a winged catheter with the end cut off. He thought nothing better than tincture of iodine for disinfection.

The President would only remark that he, in cases of retained menses, made a free opening, and allowed the fluid to drain away, using no injection of any kind. He had, in a considerable experience, had no fatal case or evil result, and he believed he had observed injurious consequences of the injection of plain warm water in cases which he had witnessed.

Dr. Galabin thought that the plan of gradual evacuation was desirable when the quantity of retained fluid was large, but not when it was small or moderate. He did not think the fatal result in his case could be attributed to the injection of carbolic acid, or even to the second incision, for a marked improvement had followed that proceeding, and continued for at least four days. He did not believe the case could have been one of hematocele, for the swelling had been perfectly movable, and he did not think that the contents of a hematocele ever so perfectly resembled the uniform treacly fluid seen in cases of retained menses.

March 1st, 1882.

DR. MATTHEWS DUNCAN, President, in the Chair.

UTERINE FIBROIDS REMOVED BY LAPAROTOMY.

Dr. Bantock exhibited five specimens of uterine fibroids removed by abdominal section within the last seven months. They weighed respectively twelve pounds, six pounds, four and a half pounds, and one pound. Some were of long standing, others of recent growth. In only one case was menorrhagia a prominent symptom, and in that it was enough to

produce great anemia. In all the pedicle was kept outside, secured at the lower angle of the wound by Koberle's serre-nœud, and supported by two stout pins, transfixing the stump just beyond the wire loop. Eight cases treated in this way recovered, while four others, in which the pedicle was treated intra-abdominally, died. Dr. Bantock also exhibited fragments of a very soft fibroid removed per vaginam by enucleation.

EXTRAUTERINE FETATION REMOVED BY LAPARATOMY.

Mr. Knowsley Thornton showed an extra-uterine fetation removed by abdominal section on February 28th. The patient ceased to menstruate in June, 1881; a membrane was expelled from the uterus in Jan., 1882. When seen after this, the diagnosis was very obscure, the physical signs resembling those of a uterine fibroid. The operation was a very difficult one, the tumor being closely adherent to omentum and uterus. It consisted of a small upper portion containing the fetus, apparently a tubal fetation, and a larger solid portion closely connected with the uterus and largely composed of blood clot. The uterine attachment was treated like an ovarian pedicle. The patient, on the third day after operation, promised well for recovery.

FIBROID RESEMBLING PLACENTA.

Dr. Herman showed fragment of a fibroid which, while undergoing spontaneous expulsion, had been mistaken for placenta.

HISTOLOGICAL RESULTS OF LACERATION OF THE CERVIX.

Dr. Galabin showed microscopic sections of the flaps removed in two cases of Emmet's operation. In both cases the surface looking towards the vagina was shown to be really the everted cervical mucous membrane. One case was recent: the cervical villi were hypertrophied, but there was no marked inflammatory change and the cylindrical epithelium was almost intact. The other case was old: the cylindrical epithelium was almost entirely lost, but there were patches of ill-formed squamous epithelium between the gland orifices. The surface was densely infiltrated with inflammatory cells, and the glands beneath dilated and proliferating.

TRACHELORRHAPHY, OR EMMET'S OPERATION.

A paper was read by Dr. W. S. Playfair on the above subject. After a short account of the history of the operation, its frequent performance in America, and the high opinion entertained of it by certain American and continental practitioners, the author referred to its comparative neglect in Great Britain. He then described the cases for which it was suited and referred to their diagnosis. Subsequently he referred briefly to the mode of performing the operation and to his own experience of it. Finally he ended his paper as follow: "My own conclusions may be

briefly summed up in the statement that, although there are a large number of cervical lacerations which produce no effect whatever, and, having healed, call for no treatment, there are a considerable number which give rise to much irritation of the uterus, which lead to important secondary results; and that these cases can often be rapidly and permanently cured by the operation, for the introduction of which we owe Dr. Emmet a debt of gratitude and with which his name will always be associated."

Dr. Savage said Dr. Playfair proceeded on principles directly opposed to those of Emmet, who insisted that the operation should not be performed when there was any sign of disease in the cervix. The American school professed to believe that every disease (none excluded) incidental to the uterus may be, and generally is, the direct consequence of a cervical laceration. The English school disbelieves this on good grounds. The diseases alluded to in Dr. Playfair's paper could be seen in their entirety through an ordinary Fergusson's speculum. To apply to them Emmet's operation, which was admittedly not seldom followed by pelvic mischief, would be an act of extreme folly. Entropion, not ectropion, according to Emmet, is the common result of the lacerations.

Dr. Herman had performed this operation in eight cases. All professed themselves benefited at the time they left the hospital. The subsequent history of two of them he did no know. Three were complicated with other conditions. Of the others, one was relieved of her symptoms, although the operation was a failure so far as obtaining union was concerned; in one the symptoms returned in three or four months, in the other he believed the operation had checked leucorrhea. The American literature on the subject consisted mostly of general statements. Few writers had published cases, and the cases were mostly complicated ones. He thought benefit had sometimes been attributed to this operation which was really due to the cure of other concomitant morbid conditions.

Dr. Priestley was prepared to believe that Emmet's operation would aid materially in curing some troublesome cases. His experience of it was limited to two or three cases; but he could recall others which had resisted all usual modes of treatment and might probably have been cured by this operation. Ectropion with granular inflammation was not nearly so difficult to cure as endo-cervicitis in the virgin. He did not think these lacerations were attended with distressing symptoms so often as was represented. The operation was only required in exceptional cases. It was painful, difficult, and sometimes dangerous. He hoped, therefore, that it would not be performed with undue frequency.

Dr. Wynn Williams did not agree with the paper either as to the simplicity or risk of the operation. Cases ending in death, metritis and

perimetritis, had been recorded. He did not think there were many cases in which it was required. Although on the lookout for them, he had only met with one. Eversion was not always due to laceration.

Dr. Bantock thought that there was a field for the operation, but that the effect of laceration and the necessity for operation had been exaggerated. He had met with one case of laceration in which he thought the operation would be required, but the patient completely recovered without it.

Dr. Murray called attention to a published fatal case. Operating when there was a suspicion of malignant disease appeared to him a curious idea. The duck-bill speculum magnified any little tear that might exist. Diagnosis was more fairly made by Fergusson's speculum.

Dr. Heywood Smith agreed with Dr. Playfair as to the importance of the operation, but maintained that arealar hyperplasia often existed without fissure, and could be cured by potassa fusa, or the cautery at a white heat. A raw granulating surface difficult to heal, was analogous to malignant papillary dermatitis of the areola and nipple and often a precursor of cancer; in such it was important to operate. He asked if any Fellows had operated immediately after labor; it seemed to him that there were considerable difficulties attendant on such a proceeding. He had performed Emmet's operation in many cases with great success, both as to repair of the cervix and relief to symptoms.

Dr. Fancourt Barnes thought the operation was only necessary in cases of bilateral laceration of the cervix with ectropion and enlargement of Nabothian glands. In unilateral laceration, thickening of the cervix could be more readily dispersed by ignipuncture.

Dr. Carter had operated six times with benefit, four of the cases remaining well three or four months subsequently. Slight laceration of the cervix was very common, not so cases requiring operation. He had been struck with the frequency with which displacement of ovaries complicated laceration of the cervix. This was so in two of his cases.

Mr. Knowsley Thornton called attention to the probability that fissure of the cervix with eversion predisposed to carcinoma, and that Emmet's operation prevented it. If so, a most important field for the operation existed. The specimens exhibited by Dr. Galabin were of great importance as aids towards settling this point.

The President could not concur in thinking trachelorrhaphy one of the greatest advances in modern gynecology. It might be an advance, but, admitting all that was said for it, it was a very small affair compared with the triumphs of laparotomy shown that evening by Dr. Bantock and

Mr. Thornton. A split condition of the cervix was said to be attended with protean symptoms and disorders. Not long ago ulceration, and then displacements, held the same position. He did not believe this, regarding all three as minor disorders, whose attempted cure was often the worst part of them. The protean disorders were accompaniments, not consequences. Nevertheless, the cure of such lesions might be a valuable service to the patient. An ectropion which could only be shown by a special speculum and special manipulations was an artificial ectropion. He did not regard the profession as having hitherto mistaken ectropion for so-called ulceration. Such cases, with or without ectropion, were generally easily cured; in cases with hypertrophy a good old plan was the caustic potassa. He believed that if a new laceration were made by cutting out a bit of the cervix, cure would follow just as well as after trachelorrhaphy. The reference to the frequency with which the cervix was formerly divided as a means of cure was not a *jeu d'esprit*, but a weighty argument. He regarded trachelorrhaphy as at present *sub judice*, but was not impressed in its favor. He had not done it, but had seen the most exaggerated lacerations of the cervix interfere in no degree with health, comfort, or fertility.

Dr. Playfair had studied carefully the writings of Thomas and Emmet, and thought that Dr. Savage must have evolved out of his inner consciousness the views which he attributed to them. It was impossible not to see that Dr. Duncan was prejudiced against the operation. His remarks showed that he was not familiar with the use of the duck-bill speculum and tenaculum in these cases. The tenaculum was used, not to produce ectropion, but to draw the lips together. He thought that when Dr. Duncan had fairly and impartially studied the subject, he would alter his opinion. This operation was of course not to be compared to those which Dr. Duncan had referred to; but if it were the fact that there were hundreds of women leading lives of constant suffering, who might be cured by this operation, then it deserved to be called a great improvement in gynecology.—*Monthly Supplement to American Journal of Obstetrics.*

TRANSACTIONS OF THE EDINBURGH OBSTETRICAL SOCIETY.

(ABSTRACT.)

Meeting, December, 1881.

DR. A. R. SIMPSON, President, in the Chair.

LARGE CYST OF CERVIX UTERI.

The President showed the fluid removed from a cyst situated in the lower portion of the cervix uteri. The patient was a multipara and had had fifteen previous labors without any difficulty; the last, two years ago. In this labor, the cyst prevented dilatation of the os; it was tapped and sixteen ounces of straw-colored fluid drawn off. It contained albumen and some mucous corpuscles.

Dr. Halliday Croom read a paper on

FUNIC HEMORRHAGE DURING LABOR.

The author commenced by pointing out that, though placental hemorrhage was comparatively common, funic hemorrhage was very rare and but little described. Such hemorrhage was liable to occur in precipitate labors in the erect position by sudden traction on and rupture of the cord. It was usually trifling. He then proceeded to describe that form of funic hemorrhage which arose from faulty disposition of the vessels, more especially in velamentous insertion of the cord. By statistics from various sources he showed the frequency of insertio velamentosa to be about 5 per 1,000. He showed the arrangement of the velamentous branches of the cord, that their calibre varied, sometimes expanding into sinuses which favored rupture, also that the vessel, but especially the veins, pursued devious courses along the membranes to their placental attachment. Attention was drawn to the various insertions of the velamentous cord. Having discussed Huter's and Schultze's theories of the development of this form of cord, he referred to the dangers associated with it. 1st. Those during pregnancy, which were, *a*, imperfect development of the fetus; *b*, abortion; *c*, early rupture of membrane. In addition to cases of others, the author mentioned several of his own where abortion and imperfect development were associated with this condition. 2d. Those during labor. These were specially hemorrhage and asphyxia.

After discussing the literature of the subject, the author described two cases of his own, in both of which velamentous insertion of the cord had been associated with rupture of the vessels during labor. In one the child was dead, in the other alive. He then discussed at length the mode in which hemorrhage and asphyxia were produced, showing the sources of hemorrhage to be as follows:

a. From vasa previa, *i. e.*, vessels coursing over that portion of the membranes presenting at the os.

b. From a low situate placenta and marginal insertion of the cord.

c. From vasa aberrantia, these being vessels diverging from the main system and coursing over remoter parts of membrane. Of these three varieties were described. *a.* Real placental vessel. *b.* Subsidiary vessel. *c.* Vasa nutrientia chorii.

Diagnosis.—This was shown to be easy, difficult, or impossible, according to the situation of the vessel.

As to treatment it consisted: 1st, in preserving the membranes intact as long as possible, so that delivery might be effected immediately after rupture. 2d, on rupture of the membranes, that form of speedy delivery which was best adapted to the special case should be employed.

The President thought the Fellows must have listened with pleasure to this paper on one of the rarer complications of labor. He had not seen a velamentous insertion of the cord which caused hemorrhage, nor one where the dispersion of the vessels was so wide as to favor hemorrhage They were indebted to Dr. Croom for his admirable description of this condition with its diagnosis and treatment, because such a complication might occur at any time. The theoretical questions raised were of interest. The central implantation of the cord, though the typical one, was the rarest. Hyrtl believed that when this was present, the placenta had developed over the fundus. When central, the insertion was perpendicular, but as it approached the margin it became more and more oblique; whether this increase in obliquity of the insertion implied a lower situation of the placenta in the uterus, as Hyrtl affirmed, he was not quite sure; it was of practical importance to remember that we may have a velamentous insertion along with the low situation of the placenta. He had performed experiments to prove what strain the cord would bear; this varied from three to ten pounds.

Dr. Peter Young had seen three cases of velamentous insertion, in one of which he felt the vessels before delivery. In one case was there hemorrhage; in one the placenta was low down, and as the os was well dilated the child could have been delivered quickly if hemorrhage had threatened. He questioned whether there was a greater liability of the veins to burst, as the veins in the body generally stand one and a half

times the strain of the arteries; but he did not know whether this was the case with the placental vessels. He was not disposed to accept the explanation given of the arrangement of the vessels in a subsidiary placenta. He thought the distance of the subsidiary lobe increased as the placenta developed. This formation was due to the formation of the placenta on both walls of the uterus. The interval of separation corresponded to the angle of junction of the uterine walls. This angle opened up as pregnancy advanced, and hence the subsidiary lobe became further removed from the greater mass of the placenta.

Dr. Croom thanked the Fellows for their reception of his paper. The reason why there was greater liability to hemorrhage on the part of the veins was from their dilated and tortuous form. Dr. Young's explanation of the development of the subsidiary lobe did not explain why the vessels to this lobe had a bow form.

A brief discussion on the use of ergot in labor followed. A unanimous opinion was expressed as to its danger during the first and second stages. Most of the Fellows used it in every case during the third stage, while others gave it only after the expulsion of the placenta.

Meeting, January 11th, 1882.

PROFESSOR SIMPSON, President, in the Chair.

Professor Simpson reported a

CASE OF BASILYSIS.

Two years ago, he made use of Guyon's apparatus for intra-cranial cephalotripsy in a case of labor in a woman with deformed pelvis. The principle of this apparatus is to trephine the vault and then the base of the skull with appropriate instruments, and finally to extract the head, now easily compressible, by means of a pair of forceps. In his patient, where the conjugata vera of the brim was two and a half inches, the transverse about four, Guyon's apparatus answered admirably; and accordingly Dr. Simpson set himself to devise a simpler instrument with which the accoucheur could perforate the vault of the presenting head, and then pass on to break up the base. The instrument he proposed is known as the basilyst. In construction it is simple, and consists of a long steel rod with a wooden handle, and terminating in a point, with a screwing surface half an inch in length. At this distance from the point, a broad shoulder prevents the screw from passing too deeply. Along one of its sides the rod is grooved to receive a branch, which is jointed to the main stem, about four and a half inches from the shoulder. When the instrument is being screwed into the bones, this will be buried

in the rod, and enter with it. By pressure on its handle, it can be made to spring out and lacerate the bone. Dr. Simpson proposed to perforate the vault with this, and then to pass it on, screw it into the base, and break the base up with it. The head would now mould, and could be extracted with Simpson's cranioclast.

Since devising this instrument, he had had no opportunity of using it until the present case, which he now wished to lay before them.

Mrs. M., a IIIpara, aged twenty-seven, was admitted to the Maternity, November 7th, 1881. Date of her last menstruation, January 21st. Was delivered by craniotomy of a female child in December, 1877, again in July, 1880, by craniotomy of a male child.

On admission, child in R. O. A. position, head freely movable above brim of pelvis, which measured as follows:

External conjugate, - - -	6¾ inches.
Diagonal conjugate, - -	3⅝ inches.
Conjugata vera, - - -	2¾ inches.

The patient fell in labor on November 10th.

Careful examination revealed conjugate contraction, also transverse contraction and large head. The posterior fontanelle was felt near the right sacro-iliac synchondrosis and sagittal suture in right oblique of pelvis. The anterior fontanelle was inaccessible. Both forceps and turning were contra-indicated, and therefore Dr. Simpson performed basilysis, and extracted the fœtus with ease.

The child was a large female, twenty-one inches in length, weighing eight and a half pounds.

Head Measurements:

O. M. 5¼; O. F. 4⅞; S. O. B. 3⅝.
Br. P. 3½; B. T. 3; T. B. 3½.

Behind the ears, the transverse diameter of the head was three inches in the uncompressed condition, two inches in the compressed.

Circumferences of Skull:

O. M. 15½; O. F. 14⅛; S. O. B. 12½.

It was found that the basilyst had broken up the petrous portions of the temporal bone thoroughly.

The patient made a good recovery.

Professor Simpson finally drew attention to the ease with which the operation had been performed, and the thorough breaking up of the vault and base, brought about by this simple, uncomplicated instrument.

Dr. Peter Young thought basilysis promised well. It was a scientific and efficient form of craniotomy.

Dr. Halliday Croom had tried basilysis once, and failed. The patient was a dwarf with a rickety pelvis and conjugata vera of two and a half inches. Unfortunately, the point of the screw of the basilyst had become blunt; it failed to bite, and he was obliged to do cephalotripsy.

Professor Simpson said that by an unfortunate mistake Dr. Croom had been supplied with an instrument employed for class purposes, and blunted by frequent use.

Dr. Peter Young narrated a case of vaginal enterocele, complicating labor. The intestine passed down between the posterior vaginal and anterior rectal walls. It was easily pushed back, and the labor terminated favorably.

Meeting, February, 1882.

PROFESSOR SIMPSON, President, in the Chair.

The President reported a

CASE OF EXOMPHALOS WHERE THE INTESTINES OF THE FETUS PRESENTED DURING LABOR.

In this case there was deficient development of the abdominal walls of the fetus and protrusion of the intestine. The fetus presented by the umbilicus and the intestines were born into the vagina. The fetus was delivered by turning.

A CASE ILLUSTRATING THE IMPORTANCE OF ACCURATE PELVIMETRY.

was presented by Dr. William Turner, Gibraltar.

Dr. Turner's case was one of a rickety pelvis where the conjugata vera was overestimated by about an inch, and consequently where turning delivered a still-born child.

Dr. Turner proposes to measure the internal conjugate as follows: Take one limb of Baudelocque's calipers, and pass it into the vagina until the knob touches the promontory. Then measure the distance between the top of the symphysis pubis and the part of the instrument which articulates with the other limb. The difference between this and the distance between the knob and articulating part of the instrument gives the conjugate.

Dr. Hart thought that the method of pelvimetry was a very ingenious one, but it would be difficult of practical application. It was difficult to say whether the point of the calipers was on the promontory, and in many cases the posterior vaginal wall would allow the calipers to be carried sufficiently back to bring the handle into the line of the conjugate.

Dr. Croom thought that an allowance must be made for the soft parts covering the symphysis.

Dr. Spence suggested that the arm of the calipers might be passed per rectum.

The President said the Society was indebted to Dr. Turner for his communication, but he was afraid that the method would be difficult to carry out practically.

Dr. W. John Kennedy, Ilminster, read a paper on

A CASE OF PREGNANCY IN A WOMAN OF SIXTY-TWO.

Dr. Sanderson had heard that the woman was sixty-four years of age. He would ascertain whether this case was the same, and report to the Fellows.

Dr. Spence had a case of an unmarried woman who had her first child in her fiftieth year.

Dr. Wilson had also a case of a woman who had her first child in her forty-ninth year. She had been married shortly before.—*Monthly Supplement to Amer. Jour. of Obstetrics.*

BOOK REVIEW.

A SYSTEM OF SURGERY.

THEORETICAL AND PRACTICAL,

ON TREATISES BY VARIOUS AUTHORS.

Edited by T. Holmes, M. A., Cantab., Surgeon and Lecturer on Surgery at St. George's Hospital, Memb. Corresp. de la Societe de Chirurgie de Paris.

REVISED AND ENLARGED BY JOHN H. PACKARD, A.M., M.D.

VOLUME 1.

H. L. BALDWIN & SON, Denver, Colo., Sole Agents for Colorado.

Since our May issue we have been occupied in carefully examining this work, whose merits fully justify our previous endorsement. With the exception of two articles, one on Diseases of the Skin, the other on the Affections of the Absorbent System, the text of the last English edition has been presented without alteration or abridgement. The article on the causes, symptoms and treatment of inflammation, fills 126 pages, and we cannot do better than to quote the cautions contained in the two

concluding paragraphs: "Between cases which urgently require lowering treatment, and cases which urgently require tonic and stimulant treatment, there are, of course, innumerable gradations." In many of these cases, as the article truly says, it is neither necessary to bleed nor to actively push alcoholic stimulants, "For here, as everywhere else, overdoctoring is an evil." * * * "Every inflammatory fever, in proportion to its intensity and duration, is necessarily followed by exhaustion; and every inflammation, in proportion to its magnitude, depends on vital power for convalescence; and he who, without reference to these facts, needlessly depletes and lowers the patient even during the height of the inflammation, much more he who does so during secondary conditions of the disease, will often contribute to render exhaustion deadly, or textural repair impossible Nor is it only depressive treatment which may be overdone. Indeed, of late years, fashion has set in the other direction; and perhaps not a little harm has come from misapplied alcoholization of the sick. True, that the cases in which life is saved even during inflammation by the judicious use of alcoholic stimulants are infinitely more numerous than those where it is saved by bleeding; and that the use of such stimulants, in certain cases of inflammation with debility, is among the most important resources of medicine. But the student must learn not to abuse this great medicinal agent; nor to prescribe it, as a thing of routine, in all cases of inflammation bearing a certain name; but always to give or withhold, and (if giving) always to proportion it, according to the special requirements of the individual case." The above may seem to some, like needless repitition, but there are many, who, without these cautions, run the risk of becoming extremists and of treating a disease by its name rather than by its individual characteristics.

CORRESPONDENCE.

NEW YORK, May 1st, 1882.

EDITOR ROCKY MOUNTAIN MEDICAL TIMES:

DEAR SIR:—Will you kindly call the attention of the readers of your Journal to the proposition which I am about to make?

A "System of Gynæcology by American Authors" is in process of preparation, and it is intended that this shall be as nearly encyclopædic as possible.

To me has been allotted the task of writing the chapter on the "History and Statistics of Ovariotomy." To obtain complete statistics

of all ovariotomies done in the three-quarters of a century of the history of the operation, is a task quite impossible, as many of the earlier ovariotomists are dead, and their records lost. Even among the living many may be disinclined to co-operate with me, as they should. Although the report of each operator's cases may cost him some time and trouble, you will readily see what a valuable fund of information will be obtained by the collation and arrangement of all the facts to be gained.

It is desirable, too, to have all material ready for the press by the end of this year,—so that the sooner the returns are made, the lighter will be the task of the editor. Please request all who wish their cases published, to send me the reports before Sept. 1 prox.

May I request your earnest co-operation in the matter, that the work may be worthy the great subject in hand.

The questions to be answered are as follows:

1. Name of Operator?
2. Age of Patient?
3. Nationality?
4. Married or single?
5. Aspiration or previous tapping?
6. Duration of growth?
7. Laparotomy or vaginal Operation?
8. Condition of patient at time of Operation?
9. Were antiseptic precautions used?
10. Was the spray used?
11. Long or short incision?
12. Adhesions or other complications?
13. Double or single Ovariotomy?
14. Pathological features of Cyst?
15. Treatment of the Pedicle?
16. With or without Drainage?
17. Duration of Operation?
18. Complicated or Uncomplicated history after Operation?
19. Anti-Pyretics used, if any?
20. Result. Cause of death, if any?
21. Primary or secondary operation?

Let the answers be as concise as possible. In many cases a simple yes or no will suffice.

Will you kindly assist in giving the greatest publicity possible to this notice, and publish it for a sufficient length of time in your Journal? Blanks, containing lists of the questions referred to, will be sent to any address.

All communications should be addressed to me at 191 Madison Avenue.

J. E. JANVRIN.

ITEMS.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, JANUARY 1, 1881, TO MARCH 31, 1882.

Bailhache, P. H., Surgeon. To proceed to Richmond, Va., as inspector, January 31, 1882.

Vansant, John, Surgeon. Detailed as President Board of Survey, physical examination of officers of the Revenue Marine Service; March 18, 1882.

Wyman, Walter, Surgeon. When relieved by Surgeon Austin to proceed to Baltimore, Md., and assume charge of the service at that port; March 4, 1882.

Fessenden, C. S. D., Surgeon. To proceed to Greenport, Sag Harbor, New York, as inspector, January 26, 1882. Detailed as President Board of Survey for the physical examination of pilot, to meet at Boston, Mass., February 16, 1882; February 7, 1882.

Purviance, George, Surgeon. To proceed to Gloucester, Mass., to extend relief to shipwrecked seamen; January 12, 1882. Detailed as Recorder Board of Survey for the physical examination of pilot, to meet at Boston, Mass., February 16, 1882; February 7, 1882.

Austin, H. W., Surgeon. To proceed to Cincinnati, Ohio, and assume charge of the service at that port, relieving Surgeon Wyman; March 4, 1882.

Godfrey, John, Passed Assistant Surgeon. When relieved by Passed Assistant Surgeon Goldsborough, to proceed to New Orleans, La., and assume charge of the service of that port; March 4, 1882. Granted leave of absence for eight days; March 24, 1882.

Irwin, Fairfax, Assistant Surgeon. Granted leave of absence for seven days; January 18, 1882.

O'Connor, F. J., Assistant Surgeon. To report to General Superintendent, L. S. S., for duty as member of board to examine keepers and crews of the Life Saving Service; January 4, 1882. Relieved on account of sickness, and directed to report to Surgeon in-charge, New York, N. Y., for temporary duty; January 18, 1882. To proceed to Detroit, Mich., and report for duty to the Surgeon-in-charge; February 9, 1882.

Banks, C. E., Assistant Surgeon. To proceed to Portland, Oregon, and assume charge of the service at that port; March 1, 1882.

Devan, S. C., Assistant Surgeon. Detailed as Recorder Board of Survey, physical examination of officers of the Revenue Marine Service; March 18, 1882.

Urquhart, F. M., Assistant Surgeon. To report to General Superintendent, L. S. S., for duty as member of board to examine keepers and crews of the Life Saving Service; January 18, 1882.

Kalloch, P. C., Assistant Surgeon. To proceed to New York, N. Y., for temporary duty, January 23, 1882.

RESIGNATION.

Hebersmith, Ernest. Resignatton as Surgeon accepted, to take effect November 26, 1881; January 17, 1882.

PROMOTION.

Smith, Henry, Surgeon. Promoted and appointed Surgeon from January 20, 1882; January 20, 1882.

APPOINTMENT.

Kalloch, Parker C., M. D., of Pennsylvania, having passed successfully the examination required by the Regulations, was appointed an Assistant Surgeon by the Secretary of the Treasury, January 23, 1882.—*Chicago Medical Journal and Examiner.*

MISCELLANEOUS.

A New Pre-ataxic Sign of Locomotor Ataxia.—Dr. Thomas Stretch Dowse, of London, has called attention to the existence of certain early symptoms of locomotor ataxia. These symptoms occur before inco-ordination, and are an evidence of a pre ataxic stage, which is curable. The signs of this stage are as follows: Inequality of the pupils and small pupils; paresis of left third nerve; cutaneous fulgurating pains; sexual excitement; transitory inco-ordination of the lower limbs; variable patellar tendon reflex, rarely absent; spinal irritability; dysesthesia, anesthesia, hyperesthesia, very transitory; visual color-changes; retinal changes; gastric and intestinal crises; mental depression and insomnia.

In an article in the *New England Medical Monthly*, Dr. William A. Hammond, of New York, states that he is able to confirm in the most positive manner the correctness of the views advanced by Dr. Dowse. He expresses his conviction of the curability of the disease in its early stage.

Dr. Hammond claims that *incontinence of urine* not infrequently precedes any other sign of the approach of locomotor ataxia, and is present for months, or perhaps years, before the slightest defect in co-ordination is noticed. This sign may be the only one indicative of spinal disorder, and probably indicates a circumscribed lesion of a congestive character, which is curable. J. B. M.

Ataxy and Sewing Machines.—M. Octave Guelliot publishes, in the *Union Medicale*, an interesting paper on two cases of locomotor ataxy in women employed in working sewing machines. In women predisposed to hysteria, working at the sewing machine seems to be, in certain cases, the occasional cause of the appearance of locomotor ataxy. The symptoms commence in the lower limbs, and follow an ascending progression. Lightning pains appear in the form of shooting pains, and traverse the limbs from below upward. Improvement occurs when the patient rests, and may last a long time. Working at the machine by means of a treadle probably acts chiefly by the concussion which is diffused throughout the spinal cord. Therefore the continuous movement of the treadle is dangerous to the workwomen, and endeavors should be made to replace in sewing machines the foot-movement by some other mechanical motor power.—*Brit. Med. Journal.*

Removal of the entire Uterus for the Cure of Cancer of the Cervix.—In the *American Journal of the Med. Sciences* for April, 1882, Dr. Clinton Cushing reports two cases of removal of the uterus for the cure of cancer of the cervix, one of which was successful and the other was fatal, with the following deductions:

1. Do not undertake the operation of entire removal of the uterus if the surrounding tissues are involved in the disease or the uterus is at all fixed; for the operation is then very difficult, and the disease would certainly return at the seat of operation.

2. Operate by the vaginal method, it being a much safer one.

3. Leave the opening made by the removal of the uterus unclosed, so as to allow perfect drainage, there being apparently no disposition to prolapse of the small intestine.

4. Keep a self retaining catheter in the bladder, in order to avoid its distension and to prevent the too frequent disturbance of the patient.

Dr. Cushing suggests that, where it can be done, enough of the diseased structure be removed for a microscopical examination before the decision is made final as to the advisability of the operation.

The Excessive Susceptibility of the Uterus.—Professor Verneuil observes that while the uterus most frequently may be submitted with impunity to the most varied operations, it is of importance to bear in mind

that in some women the most simple ones are attended with disastrous results. A fatal peritonitis has followed a simple exploration *per vaginam*, examples of which are given in the thesis of Leteinturier and in Engelmann's memoir; and Prof. Verneuil cites two cases in which death supervened in women suffering from cancer of uterus. In one perchloride of iron had been applied, and in another some fungosities had been slightly touched with chromic acid. After even the most simple surgical intervention in the uterus, the most minute precautions should be taken in order to avoid these possible accidents.—*Med. Times and Gazette.*

Organisms in Surgical Dressings.—M. Gessard (*The Lancet*) has investigated the cause of the peculiar green-and-blue discoloration occasionally seen on surgical dressings. By cultivation he has succeeded in isolating an organism which, in a series of generations, appears to be very constant in its form and in giving color to the culture-liquids. The organism is itself colorless, globular in form, one or one and a half micromillimeters in diameter, aerobic, and very mobile. It can easily be cultivated between the temperatures of 35° and 38° C. in neutralized urine or in decoction of carrot, in saliva, sweat, albuminous liquids, hydrocele liquid, or the serum of a blister. The blue coloring-matter secreted is the pyocyanine of Fordos, which is reddened by acids, and regains its blue tint under the influence of alkalies. It is easily extracted by shaking up the liquids with chloroform. If water acidulated with sulphuric or hydrochloric acid is then added, and the red acid solution is neutralized by potash and again treated by chloroform, a pure blue liquid is obtained, from which the pyocyanine can be obtained by evaporation in a crystalline form prisms or needles, or rectangular plates. The watery solution is neutral on reaction and is not changed by boiling.

"*Digitated Stockings.*"—We are inclined to think that digitated stockings—that is stockings with a stall for each toe—would conduce much to comfort, and spare many persons who now suffer from the development of soft corns between the toes a serious trouble. They would also prove more cleanly than the stockings in common use, because they would naturally absorb and remove the acrid moisture which accummulates between the toes, and which is the general cause of offensive odors from the feet. They will, moreover, give the feet better play, allowing its phalanges greater freedom of action. And, lastly, a well-fitted digitated sock or stocking will remove a mass of material from the toe of the boot and at the same time give increased breadth and space for expansion across the base of the toes. The new stockings, supposing them to be well cut and fitted, possess many advantages.—*The Lancet.*

Gallstones Passed by an Infant.—Dr. A. D. Walker reports in the *British Med. Journal* a case of a male child, three months old, brought up at the breast, and, with exception of slight jaundice during the first month, entirely healthy, who was suddenly seized with a crying-spell which lasted six hours, requiring sedatives to quiet it. Castor oil was afterward given, which produced a free evacuation from the bowels; in this was found three gallstones. The largest one weighed two grains.

J. B. M.

Is the Ovarian Cell Pathognomonic?—The accurate diagnosis of ovarian tumor is of vital importance, as mistakes are by no means rare even among our most skillful diagnosticians. In the *American Journal of the Med. Sciences* for April, 1882, Dr. W. A. Edwards published an account of some researches made in the Pathological Laboratory of the University of Pennsylvania bearing upon the value of the ovarian cell as a diagnostic point, from which he concludes:

1. The ovarian cell is not diagnostic of the ovarian tumor.

2. We may have a fluid from an ovarian tumor entirely devoid of the ovarian cell.

3. On the other hand, we may have an abdominal fluid which is not ovarian presenting the cell in great abundance.

4. With the present state of our knowledge, the accurate microscopical diagnosis of ovarian dropsy is impossible. The most distinguished ovariotomists invariably make their first incision an exploratory one.

Action of Organic Matter on Silver Salts.—Dr. Henry Leffman details in the *Analyst* a series of experiments showing the extreme delicacy of ammonio-nitrate of silver as a test for certain kinds of organic matter in water. A few grains of nitrate of silver were dissolved in an ounce of water and rendered strongly alkaline with ammonia. This solution was added, in the proportion of one to fifty, to the water, to be tested and exposed to the sunlight for two hours. The experiments proved that this test was extremely sensitive to the presence of urine, a brown color being produced. This test may prove of value in water analysis. J. B. M.

An Unanswered Query.—Mr. Jordan Lloyd, of Birmingham, gives an interesting account of a case in which the left common carotid was ligatured for hemorrhage from a gunshot-wound of the neck. Death ultimately occurred, the narcosis produced by a subcutaneous injection of one quarter of a grain of morphia never passing off. Mr. Lloyd adds, "In conclusion I would ask the experimental physiologist or therapeutist a question, the solution of which I, as an English resident, am forbidden determining for myself, thanks to the Vivisection Act. . . . It is this,

Whether in a creature narcotized the sudden deprivation of one half of the brain of its blood-supply lessens or deepens the narcosis.—*Birmingham Medical Review.*

Death of Dr. Hodgen.—Prof. John T. Hodgen, M. D., a native of Kentucky, but for many years a prominent medical teacher, practitioner, and surgeon in St. Louis, died at his home on the 28th of April, in his fifty-seventh year. The cause of his death was peritonitis, set up by the escape of bile into the abdominal cavity through an ulcer at the base of the gall-bladder. Dr. Hodgen was a man of rare attainments and of wonderful capacity for work. Notwithstanding the demands made upon him by a large practice, he held the trying position of dean in a medical college, lectured during the session of the school, and found time for much good work in medical literature. He was a frequent contributor to medical journals, and the departments of Injuries of the Chest and Abdomen in the American edition of *Holmes' System of Surgery* were edited by him. He leaves unfinished a work on the subject of Injuries to Bones and Joints, which for some time previous to his death he had been preparing for the press.

The Violet Menaced.—The charming violet is in its turn menaced with destruction, like so many other vegetable productions, for the plantations on the Rhone are being ravaged by an epidemic. An almost imperceptible spot shows itself on the blue of the petals from the period of their blowing, and rapidly extends. The flower becomes colorless and dried up as if devoured by a galloping consumption. This is supposed to be due to the ravages of a microscopic insect, which makes no distinction between the Parma violet and the common violet.—*Med. Times and Gazette.*

Diagnosis of Death.—In an article on Hasty Burials the *Med. Press and Circular*, after referring to a recent case in Brussels where a cataleptic child barely escaped being buried, states that an ophthalmoscopic examination is an excellent means of diagnosis. During the last agony it is easy to identify the gradual anemia of the arteries and the pallor of the optic papilla. When life is extinct the veins become separated at points as if cut by a knife, due to the liberation of the gases of the blood. The phenomena is called pneumatosis. J. B. M.

Antidote for Strychnine.—Dr. Robert Barnes reports in the *British Med. Journal* a case of strychnine poisoning successfully treated by inhalations of nitrite of amyl.—*Louisville Med. News.*

In the *Lancet*, W. Lewis Morgan reports the following case: A woman, aged 54, had just put a piece of pork in her mouth, and turning to say something to her child, the piece of pork "slipped back into her

throat." This was followed by severe paroxysms of coughing and great difficulty in breathing. In a few hours her face began to swell. The face, neck and upper part of the throax became much swollen and emphysematous. The loose cellular tissue beneath the lower eyelids was greatly puffed out. An attempt was made to pass an œsophageal bougie, but it was stopped at six inches by some obstacle. Ether was then administered and two more attempts were made to pass a bougie; the second was successful, the instrument passing into the stomach. It could be felt to push something before it. When the patient recovered from the effect of the anæsthetic she could swallow much better, but still the attempt caused great pain and spasmodic cough. She was discharged after ten days, well, the emphysema entirely gone. The piece of pork which caused the mischief was only just taken into the mouth, and consequently had not been at all chewed; it was all meat, without any bone. It seems difficult to account for the superventiôn of surgical emphysema; one would be inclined at first to ascribe it to some injury the result of an attempt to pass an instrument, but there can be no doubt, from the patient's account, that the swelling was previous to all surgical interference, and, in fact, was the cause of the patient's friends seeking medical advice. It has seemed to me that the phenomena may be explained by supposing that the meat, when first suddenly bolted, lodged in the back of the pharynx, over the entrance to the air passages; that this caused sudden and severe fits of coughing and spasm of the glottis; during these great expiratory efforts the trachea may have been slightly lacerated, or rather torn, and thus air would have been forced into the surrounding cellular tissue at each succeeding paroxysm of coughing; but I must confess that the explanation is not quite satisfactory, for one often sees patients afflicted with severe paroxysms of coughing and yet no rupture of the trachea takes place. The piece of meat could not have lacerated the œsophagus or trachea, for the patient is quite positive it was only lean, without bone. The subsequent history of the case would be against the food having passed directly into the air passages, although it might at first have lodged in the pharynx, and compressed the upper part of the larynx for a little time, then passed just down to the junction of the pharynx and œsophagus, whence it was pushed by the bougie into the stomach.

Hydrocele of the Neck.—At a recent meeting of the Glasgow Medico-Chirurgical Society (Glasgow *Medical Journal*), Dr. James Whitson reported a case of hydrocele of the neck. He first spoke of their extreme variety. The patient was a girl, 7 years of age, and the hydrocele was situated on the right side of the neck. It had first appeared when she was 5 months old, since which it had gone on increasing in size, but had

never caused any inconvenience. The head was carried slightly to the left side. There was an oblique depression in the tumor corresponding to the sterno-mastoid. On August 14th, 1881, it was evacuated by the aspirator and continuous pressure afterwards applied. By the middle of November the cyst was as large as ever, and on the 18th, with antisceptic precautions, an incision was made into it. When it was thoroughly evacuated, tincture of iodine was applied to its interior by means of a brush. Decalcified drains were then introduced, and the wound dressed. Five weeks after operation the wound was healed, and the hydrocele has been completely cured. In discussion, it was considered that this mode of treatment was an improvement on the old method. Stuffing the sac with lint had been tried, but it set up a great deal of inflammation and caused puckering of the skin. Setons had also been used. One case was mentioned where the cyst had been washed out with chloride of zinc, and the result was good.

Hysterical Retention of Urine in a Man.—Dr. James Russell reports the following case in the *Medical Times and Gazette*: A man aged forty-one was admitted into the hospital complaining of complete inability to pass his urine and of defect in the free use of his legs. He brought with him a flexible catheter, which he kept by his side, by means of which he emptied his bladder three times in the day. His statement was that during the preceding fortnight he had experienced difficulty in walking and that a week before entering the hospital he had suddenly lost the power of expelling his urine. He endured the retention of urine until the following day, when medical help was summoned and a catheter was pressed without difficulty. He was at first supposed to be suffering from a paralytic affection, but further investigation threw doubt on the accuracy of this opinion, and confirmed a suspicion suggested by the very sudden manner in which such complete paralysis of the bladder appeared to have been effected. The man was very nervous, and eighteen months previously had experienced severe protracted mental strain. This was followed by a nervous tremor, especially when he was worried, which prevented him from sleeping. The urethra freely allowed the passage of a large sound and the prostrate was healthy. There was a scanty deposit of leucocytes, but in other respects the urine was healthy. The catheter was permanently withdrawn, and the patient was told that he must send for one of the resident officers if he wanted his bladder emptied. The effect was almost immediate; on the following day or day after he passed his urine spontaneously, and from that time had no further trouble in this respect. The power of walking was recovered gradually.

In this case the sequence of events was very plain, and shed an inter-

esting light on what probably occurs in many cases of hysteria. We have, in the first place, a morbid condition of the nervous system, consisting in a highly sensitive state of the recipient centres, engendered by much anxiety, acting on nerve tissue already by predisposition intolerant of any unhealthy influence, as indicated by the nervousness, the tremors, and the sleeplessness. The effect of the limb-pains, in themselves by no means severe, in restricting the free use of muscles and joints to such an extent as to interfere with locomotion, pointed to morbid sensibility to pain. Under these circumstances urethral irritation of a very mild character, (for it was never spoken of afterwards) was set up—possibly rheumatic, or connected with the previous gonorrhœa, indicated by the leucocytes in the urine—and pain was produced in the urethra by the presence of urine. As a result, the pain in the urethra, just as the urine had entered the neck of the bladder, consumed the whole attention of the patient, and he forgot to exert the normal cerebral influence which is requisite in order to control the inhibitory centre of the vesico anal apparatus; the reflex activity of the sphincter vesicæ thus remained in full activity, and the passage of urine was effectually barred.

It is hardly necessary to recall the generally received opinion that a controlling centre probably exists in some part of the cord at a higher level than the genito-anal centre, which governs the action of the sphincter vesicæ; and further, that every one's experience supports the result of observation, to the effect that the controlling centre in the cord, or (if that do not exist) the entire urinary muscular apparatus, is subject to the influence of the cerebrum.

The case has much analogy with hysteria, both in its substratum of an abnormal condition of the nervous centres, and in the presence of some local defect as the immediate cause of the morbid development; as, *e. g.*, witness how many cases of hysterical aphonia start from an ordinary catarrhal sore throat.

The African Treatment of Insanity.—The *American Journal of Insanity* contains the following from the *Asylum Journal*, British Guiana, October, 1881, which from its originality and the hints it contains, may prove of interest and service.

The following letter received from the wife of an aboriginal African now a patient in the Asylum tends to controvert the opinion held by some that insanity is unknown on the dark continent. It shows that it is sufficiently common for its hereditary character to be acknowledged, and for a recognized method of treatment to be formulated. Many alienist physicians in more enlightened countries may well envy the certainty with which a cure is effected in three months, and if the same result

could be promised to them they might be inclined to try the plan. Although non-restraint and soothing principles of treatment are adopted it will be seen that prolonged seclusion is enjoined. Like the gods of old, the patient must have a special food and drink; unfortunately what these are is not specified. Does this not resemble the colored light treatment so lately in vogue in Europe, and is it much more irrational than it? "I came to the Doctor to let him understand about my husband's sickness. So Master he is not a native for this country, the sickness he is troubled with is not a sickness for him to be here, some of his countrymen from Georgetown made me to understand so. They did went up the river to see him, so I tell them he is in the charge of the Doctor, they say that this sickness is from their country, it is the gift of God from their country from generation to generation as far as they know. If they were he wouldn't have been here to-day, because we would have known what to do to keep down the sickness from him. Sir the sickness don't require no noise at all, he must be in a house him alone and those who attended to him and they does not use him every kind of food, purpose food must be for him, and he must close him in a house for nine days then you will hear he himself call to go out, and when you hear him call you must not keep him back at all that will make him cross. So I humbly beg you Doctor please to let him out, that countrymen may try with him a little, Sir because they fully understand what is his sickness and in they country it takes only three months to get better and since he is here this now twelve months, so please Doctor let him out let me try with him. They are Crumanty nation nobody don't understand ways excepting to their own country people."

Two Probable Cases of Trichinosis.—Dr. C. W. Wooldridge reports the following cases in the Boston *Med. and Surg. Journal:* He was called to see a man suffering from fever, and general sense of discomfort. The tissue about the eyes was greatly swollen, while a general puffiness seemed to be spreading over the face. There was no pain or inflammation, and no symptoms by which to locate the seat of the trouble. To make the matter more peculiar, a young man. aged 18, residing in the same house, was suffering from exactly the same symptoms, with the only difference that they were a few hours later in their development. He prescribed a little cream of tartar as a safe eliminatory, and awaited developments. The next day the fever was about the same, the swelling had become more general, involving the face and neck, while the hands and arms also showed some puffiness. There was a painful sensation over the stomach, and a diarrhœa, out of all proportion to the medicine given, had set in. On the fourth day the swelling had begun to diminish; but the fever and

diarrhœa continued. By this time their complaints of muscular pain were much more decided. Trichinæ now suggested itself. They admitted having eaten a meal of new ham, several days before. The ham had, subsequently, been cooked and eaten, and no trace of it, or of the hog from which it was taken, could be found. After ten or twelve days there was a gradual improvement, but long after all actual disease seemed to have ceased, they were nearly helpless, and two months afterward they were but beginning, in a feeble way, to try to do some work. Twenty-two days after the beginning of the sickness a small piece of the deltoid muscle was removed, and subjected to microscopical examination for trichinæ, with negative results. The doctor believes that mild cases of trichinosis occur much more frequently than they are recognized. The cause is found everywhere, and there is no practical way in which it can be detected and avoided.

New Treatment for Chordee.—M. Combillard recommends, in *C. Courrier Medical*, to calm the pain induced in gonorrhœa, by nocturnal erections and chordee, injections containing bromide of potassium.

These injections are not, as a rule, in any degree irritating; they may be made four times daily, the last just before bedtime. The liquid should be allowed to remain one or two minutes in the urethra, in order to have the desired effect. The following is the most convenient formula:

R. Potass. bromid., - - - - drs. iss.
Tr. opii, - - - - - - drs. ss.
Glycerinæ, - - - - - drs. iij.
Aquæ, - - - - - - ozs. v. M.

In fifteen out of eighteen cases there was rapid diminution, or complete suppression of the erections. Bromide of potash gives these happy results, undoubtedly, owing to its anæsthetic influence on certain mucous membranes in moderating their reflex excitability.

Gallo-Roman Remains.—In 1881 Dr. Habran presented to the Societe Medicale, of Rheims, bones collected from one tomb in the ancient Gallo-Roman cemetery, in the Faubourg de Laon, at Rheims.

These bones presented exostoses at the sternal extremity of the clavicle, and the inferior end of right ulna, junction of the dorsal vertebræ, and finally, ulcerations of the teeth, analogous to those described by M. Parrott in syphilitic children.

M. Habran is of opinion that this ancient inhabitant of Rheims was undoubtedly syphilitic, as proven by the traces left by the disease on the bones.

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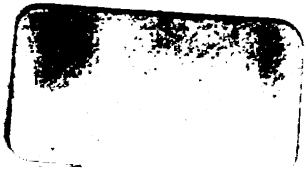

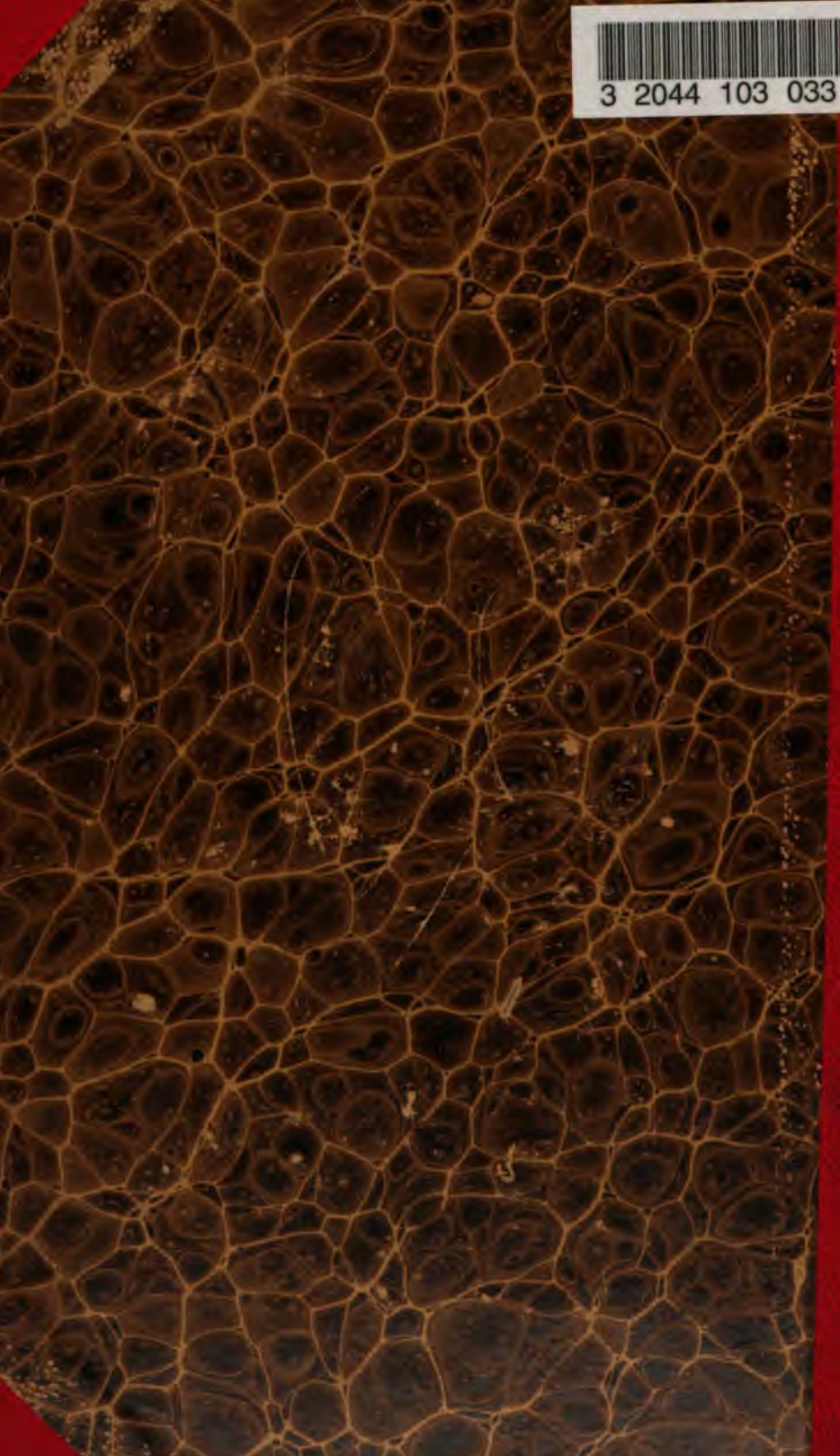

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